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NEW SPECIES OF NORTH AMERICAN FUNGI FROM VARIOUS
LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

*PYRENOMYCETES.

Asterina graminicola E. & E.

On living and partly dead leaves of *Oryzopsis asperifolia*, Lansing, Mich. May, 1892. (G. H. Hicks. No. 574). Perithecia scattered or subgregarious, superficial, convex-discoïd, perforated at the apex, 150μ , diam., mycelium reduced to a scanty fringe of spreading hyphæ around the base. Asci obovate, $22-30 \times 12-20\mu$, sessile, 8-spored. Sporidia inordinate, clavate-oblong, hyaline, uniseptate and strongly constricted at the septum so as easily to separate into two parts, quite variable in size—in some perithecia $7-10 \times 2\frac{1}{2}\mu$, in others $10-15 \times 3-3\frac{1}{2}\mu$.

Asterina leemingii E. & E.

On living leaves of *Galax aphylla*, Marion, Va. June, 1892. Coll. Miss Helena Dewey Leeming, com. Smith Ely Jelliffe, M. D.

Mycelium hypophyllous, forming black, orbicular spots 2-4 mm. diam., composed of superficial appressed, radiating, dendroid-branched hyphæ furnished with globose hyphopodia $8-10\mu$, diam. Perithecia numerous, seated on the hyphæ, depressed-globose, 150μ , diam., with a papilliform ostiolum which is soon deciduous leaving the perithecium perforated and convex. Asci oblong, $35-40 \times 20-24\mu$, paraphysate, 8-spored. Sporidia crowded, oblong-fusoid, yellowish-hyaline, uniseptate, scarcely constricted, slightly curved, $18-22 \times 5-6\mu$. Has the habit of *Dimerosporium orbiculare* B. & C. but differs in several respects.

Rosellinia megalocia E. & E.

On dead willow. Sheridan, Montana. Jan., 1892. (Mrs. Lydia A. Fitch.)

Perithecia gregarious, globulose, subapplanate above, brown, sunk in the bark, $1\frac{1}{2}$ mm. diam., the apex erumpent and surrounded by the laciniae of the ruptured epidermis, ostiolum tubercular-conical, black. Asci cylindrical, paraphysate, 8-spored, p. sp. about $100 \times 6-7\mu$. Sporidia uniseriate, oblong, brown, $15-20 \times 7-8\mu$, not appendiculate. The walls of the perithecia are thick and solid, coriaceo-

carbonaceous in texture, not easily broken. In this respect and in its larger size it differs from *R. mastoidea* Sacc.

Melanopsamma corticola E. & E.

On outer bark of living *Quercus alba*, Newfield, N. J. July, 1890.

Perithecia erumpent-superficial, scattered, hemispherical, black, small ($175\text{--}200\mu$), the papilliform ostiolum situated in a slight depression and soon deciduous leaving a small, round opening. Asci fasciculate, oblong-cylindrical, $50\text{--}65 \times 10\text{--}12\mu$, with filiform, branched paraphyses, 8-spored. Sporidia biserial, clavate-oblong, hyaline, granular and multinucleate at first, becoming uniseptate and constricted at the septum, $12\text{--}15 \times 3\text{--}3\frac{1}{2}\mu$.

This was accompanied by *Amphisphæria fallax* DeNot.

Nectria nipigonensis E. & E.

Parasitic on *Diatrypella favacea*, on dead birch limbs. Lake Nipigon, Canada. Aug., 1884. (Macoun.)

Perithecia 15–40, cespitose on the erumpent disk of the *Diatrypella*, globose, about $\frac{1}{4}$ mm. diam., pale reddish-yellow, becoming darker, collapsing at the apex, scarcely papillate, smooth. Asci cylindrical, paraphysate, sessile, $50\text{--}55 \times 6\text{--}7\mu$. Sporidia subbiconic-elliptical, hyaline, uniseptate, scarcely constricted at the septum, $10\text{--}12 \times 5\text{--}6\mu$. Conical stromata (*Tubercularia*) mixed with the perithecia, pale yellow, depressed-globose, about $\frac{1}{4}$ mm. diam., sessile, bearing a peripheral layer of minute ($3\text{--}4 \times 1\mu$), hyaline allantoid, slightly curved conidia borne on slender, branching sporophores $20\text{--}25\mu$ long.

Lasiosphæria trichopus E. & E.

On rotten wood, London, Canada. (Dearness, 677 D.)

Perithecia densely gregarious, superficial, ovate, about 150μ , high, fringed around the base with short ($35\text{--}60 \times 3\mu$), faintly septate, spreading, brown hyphæ, glabrous above; ostiolum broad-papilliform. Asci oblong-cylindrical, or clavate-cylindrical, sessile, paraphysate, 8-spored, $75\text{--}80 \times 12\text{--}15\mu$. Sporidia biserial, fusoid-oblong, slightly curved, obscurely 7–9 septate, granular, yellowish, $25\text{--}40 \times 6\text{--}7\mu$. *L. cæsariata* C. & P. has perithecia black and shining subglobose and twice as large as this.

Trichosphæria subcalva E. & E.

On rotten wood of *Ostrya virginica*, London, Canada. Aug., 1892. (Dearness, No. 1,987.)

Perithecia gregarious, ovate, $\frac{1}{3}$ mm. diam., sparingly pilose around the base, with rather pale, weak hairs, smoother and bare above, black. Ostiolum papillose-conic, perforated. Asci clavate-cylindrical, $100 \times 10\mu$, with abundant paraphyses, 8-spored. Sporidia obliquely uniseriate or sub-biseriate, oblong-elliptical, hyaline, granular, $13-16 \times 5-6\mu$. The sporidia agree with those of *Tr. punctillum* Rehm, but that has the perithecia smaller and seated on a distinct brown subiculum.

***Herpotrichia incisa* E. & E.**

On dead roots of *Acer spicatum*, London, Canada. April, 1892. (Dearness, No. 1,810.)

Perithecia densely gregarious, superficial on the blackened surface of the wood, ovate-conical or subpyramidal, $300-400\mu$, diam., often stellately incised at the apex, black, roughish, with a few weak, pale, rudimentary hairs at first. Asci cylindrical, $150-200 \times 12-15\mu$, with abundant, paraphyses, 8-spored. Sporidia overlapping-biseriate, fusoid, subhyaline, slightly curved, uniseptate and slightly constricted at the septum, $35-45 \times 7-8\mu$.

***Chaetomium glabrescens* E. & E.**

On a rotten limb (*Salix*)? Rockport, Kansas. Dec., 1892. (Bartholomew, No. 810.)

Gregarious, surrounded by and nearly sunk in a felt-like, black subiculum composed of rough, branching black, interwoven hairs sending up numerous straight, rough, simple bristles, $\frac{1}{4}-\frac{1}{2}$ mm. long. *Perithecia* ovate-globose about $\frac{3}{4}$ mm. diam., clothed, especially below, with long, straight, rough, simple bristles which also clothe at first, but more sparingly, the upper part of the perithecium, but these are soon deciduous, leaving the apex bare. Ostiolum conic-papilliform, soon deciduous. The perithecia are very brittle and the upper part soon falls away leaving the cup-shaped base. Sporidia elliptical, or almond-shaped, $8-10 \times 6-7\mu$ (front view), $7-9 \times 5\mu$, when seen edge-wise. Asci not seen.

***Teichospora gregaria* E. & E.**

On decorticated *Fraxinus*, London, Canada. Feb., 1892. (J. Dearness, No. 1,027.)

Perithecia densely gregarious, ovate, $\frac{1}{3}-\frac{1}{2}$ mm. diam., black, superficial, with a conic-papilliform ostiolum. Asci cylindrical, short-stipitate, 8-spored, with abundant paraphyses, p. sp. about $75 \times 14\mu$. Sporidia subuniseriate, oblong-elliptical, about 5-septate with a lon-

gitudinal septum often extending through all the cells, constricted in the middle, hyaline and uniseptate at first, becoming yellow-brown, $18-22 \times 10-12\mu$, ends obtusely pointed or regularly rounded.

The perithecia are attenuated above into the ostiolum so as to be subconical.

***Teichospora variabilis* E. & E.**

On dead sage brush (*Artemisia*), Sheridan, Montana. Jan., 1892, (Mrs. L. A. Fitch.)

Perithecia scattered, erumpent-superficial, black, rough, depressed-hemispherical, $\frac{1}{3}-\frac{1}{2}$ mm. diam., at first partly covered by the loose fibers of the weather beaten bark, finally collapsing above. Ostiolum papilliform, finally perforated. Asci oblong, abruptly contracted below into a very short stipe, paraphysate, 8-spored, $75-80 \times 20-22\mu$, Sporidia biseriate or crowded, elliptical, at first of a uniform yellow, soon becoming a bright golden yellow and 5-7-septate and muriform, finally becoming almost black and opaque, $20-25 \times$ about 12μ .

***Teichospora nautica* E. & E.**

On decorticated, weather-beaten, poplar limbs, in Mill Creek, Sheridan, Montana. June, 1892. (Mrs. L. A. Fitch.)

Perithecia scattered or gregarious, hemispherical or hemispheric-elliptical, with the flattened base slightly sunk in the surface of the wood, carbonaceo-membranaceous, about $\frac{1}{2}$ mm. diam., black, subshining at the apex. Ostiolum papilliform, at length perforated. Asci cylindrical, short-stipitate, $100-110 \times 12\mu$, paraphysate, 8-spored. Sporidia uniseriate or sub-biseriate, elliptical or slightly ovate-elliptical, with three main transverse septa, often becoming 5-septate, with 1-2 of the cells divided by a transverse septum, $18-22 \times 8-11\mu$.

***Teichospora aspera* E. & E.**

On old weather-beaten, cottonwood boards, Rockport, Kansas. Jan., 1892. (Bartholomew, No. 853.)

Perithecia gregarious, semi-erumpent, membranaceous, hemispherical or depressed-globose, about $\frac{1}{2}$ mm. diam., tubercular roughened, collapsing when dry, with a broad papilliform ostiolum, finally broadly perforated or sublaciniately ruptured at the apex. Asci clavate-cylindrical, paraphysate, subsessile, $75-90 \times 10-12\mu$, 8-spored. Sporidia mostly overlapping uniseriate, ovate-oblong, 3-septate, and constricted at the middle septum (sometimes at all the septa), brown,

one or both the inner cells divided by a longitudinal septum, $15-20 \times 6-8\mu$.

Differs from *T. muricata* E. & E. in its shorter and narrower asci and narrower sporidia.

Closely allied to *T. emilii* Fabre.

Teichosporella montanæ E. & E.

On drift wood, in Mill Creek, Sheridan, Montana. June, 1892. (Mrs. L. A. Fitch.)

Perithecia scattered, ovate-conical, $\frac{1}{4}-\frac{1}{3}$ mm., diam., at length partially collapsing above, emergent-superficial among the loosened fibres of the wood, membranaceous, black, perforated above. Asci clavate, short-stipitate, 8-spored, with abundant paraphyses, $80-85 \times 12-15\mu$, (p. sp. $65-70\mu$). Sporidia biseriate, oblong-clavate or oblong-elliptical, 3-5-septate, with 1-2 of the cells divided by a longitudinal septum, hyaline, $22-30 \times 8-12\mu$, mostly a little curved and finally more or less constricted at the septa.

Lophiosphæra hysterioides E. & E.

On a rotten log of *Carya*, St. Martinville, La. Jan., 1890. (Langlois, 2,215.)

Perithecia densely gregarious, hemispherical, subelliptical on a transverse section, about $\frac{3}{4}$ mm. diam., with their bases slightly sunk in the wood, black, subcarbonaceous. Ostiolum linear, compressed, extending nearly or quite across, open, and often with a parallel groove on each side of the base; sometimes the ostiolum is only slightly prominent, then resembling *Hysterium*. Asci slender-clavate-cylindrical, $55-60 \times 8\mu$, (p. sp.) or, including the slender base, $80-90\mu$ long, with abundant paraphyses. Sporidia subbiserial above, fusoid, uniseptate and constricted at the septum, slightly curved, pale yellowish-brown, $16-18 \times 4-4\frac{1}{2}\mu$.

Lophiosphæra gloniospora E. & E.

On decorticated willow limbs, among driftwood, in Mill Creek, Sheridan, Montana. June, 1892. (Mrs. L. A. Fitch.)

Perithecia scattered or gregarious, erumpent, convex-hemispherical, about $\frac{3}{4}$ mm. diam., of carbonaceo-coriaceous texture, becoming prominent but not superficial, remaining more or less covered by the fibers of the wood. Ostiolum narrow, compressed, not apparent in the young specimens. Asci cylindrical, short-stipitate, $100-110 \times 10-12\mu$, 8-spored, with abundant paraphyses. Sporidia uniseriate, obovate, hyaline, uniseptate, constricted at the septum, $12-16 \times 6-7\mu$,

almost exactly like those of *Glonium lineare*. The surface of the wood, in those parts occupied by the fungus, is, for the most part, uniformly blackened.

Lophiosphæra fluviatilis E. & E.

On decorticated, weather-beaten limbs of (*Salix*)? Among drift-wood, near Sheridan, Montana. May, 1892. (Mrs. L. A. Fitch.)

Perithecia gregarious or scattered ovate-globose or elliptical, about $\frac{1}{8}$ mm. diam. ($\frac{1}{4}$ – $\frac{1}{2}$), emergent among the loosened fibers of the wood which, when the perithecia are gregarious, is generally blackened on the surface. Ostiola variable, thin, compressed or also sometimes simply papilliform, at length perforated and sometimes partially collapsing. Asci clavate-cylindrical, 75–80 x 12 μ , short-stipitate, with abundant paraphyses. Sporidia sub-biseriate, fusoid, hyaline, uniseptate and constricted, mostly swollen on each side of the septum, slightly curved, nucleate, 20–23 x 5–6 μ .

Otthia ostryaegena E. & E.

On dead limbs of *Ostrya virginica*, London, Canada. April, 1892. (Dearness, No. 1,782.)

Perithecia erumpent in clusters 1–2 mm. across, surrounded by the ruptured epidermis, $\frac{1}{8}$ – $\frac{1}{2}$ mm. diam., globose, black, granular-roughened, and finally collapsing. Ostiolum papilliform, at length, perforated. Asci cylindrical, 100–120 x 15 μ , stipitate, p. sp. 90–100 μ long, paraphysate. Sporidia 8 in an ascus, uniseriate, elliptical or oblong-elliptical, brown, uniseptate and constricted at the septum, 20–25 x 11–13 μ .

The clusters of perithecia are larger and more distinctly erumpent than in *Otthia crataegi* and the perithecia themselves are white inside.

Montagnella acerina E. & E.

On dead limbs of *Acer spicatum*, near St. Catherine, Ontario, Canada. May, 1892. (Dearness, 1,860.)

Perithecia subglobose, black, about $\frac{1}{4}$ mm. diam. erumpent-superficial in small (1 mm.) but dense clusters, or sometimes in elongated strips one mm. wide and 3–5 mm. long. Ostiola strongly papilliform, at length perforated. Asci cylindrical, p. sp. 60–65 x 6 μ , with abundant paraphyses, 8-spored. Sporidia uniseriate, oblong-elliptical, 3-septate, yellowish or olivaceous hyaline, 10–12 x 4–5 μ .

Wallrothiella parvula E. & E.

On bark of birch roots, London, Canada. April, 1892. (Dearness, No. 1,633.)

Perithecia scattered or subgregarious, superficial, ovate-conical, black and subshining, minute, $150-200\mu$ diam., with a conic-papilliform ostiolum. Asci fusoid, i. e. thickest in the middle and tapering to each end, obscurely paraphysate, 8-spored, about $50 \times 5-6\mu$. Sporidia biseriate in the middle of the ascus, uniseriate at each end, oblong-elliptical, hyaline, binucleate, $5-6 \times 1\frac{1}{2}-2\frac{1}{2}\mu$.

Sphaerella diroæ E. & E.

On living leaves of *Dirca palustris*, London, Canada. July, 1892. (Dearness, No. 1,941.)

Spots amphigenous, dark brown below, dirty white above with a dark brown border, irregular in shape, 2-4 mm. diam., subconfluent, often several of the dirty white spots included in a large dark brown area. Perithecia epiphyllous, scattered on the spots, subprominent, perforated above, $80-110\mu$ diam. Asci oblong-cylindrical, about $35 \times 6\mu$. Sporidia biseriate, oblong, uniseptate, hyaline, scarcely constricted, $15-20 \times 5-6\mu$.

A *Macrosporium* was found on the same spots.

Sphaerella oryzopsis E. & E.

On leaves of *Oryzopsis asperifolia*, Lansing, Mich. May, 1892. (G. H. Hicks, No. 573.)

Perithecia scattered or oftener in definite patches about 1 cm. diam., sunk, except the subobtuse, slightly projecting apex, in the parenchyma of the leaf, small ($75-80\mu$), black. Asci fasciculate, sessile, paraphysate, $35-40 \times 10-12\mu$, 8-spored. Sporidia biseriate, clavate-oblong, hyaline, uniseptate and slightly constricted at the septum, $12-15 \times 3-3\frac{1}{2}\mu$.

Apparently closely allied to *S. oryzæ* (Catt.), but differs in its oblong-fusoid asci, and sporidia.

Sphaerella solani E. & E.

On leaves of *Solanum dulcamara*. Ohio, Kellerman, No. 412, and London, Canada. (Dearness, No. 866.)

Spots numerous, small (1-2 mm.), round, white, deciduous, thin and pellucid. Perithecia mostly epiphyllous, few on a spot, lenticular, perforated, $80-110\mu$ diam. Asci oblong, $35-40 \times 10\mu$ paraphysate, 8-spored. Sporidia biseriate, fusoid-oblong, uniseptate, scarcely constricted, $10-12 \times 3\mu$, ends subacute.

Not distinguishable outwardly from *Leptosphaeria solani* E. & E. which is found on the same leaves.

Sphaerella lycii E. & E.

On living leaves of *Lycium vulgare*, London, Canada. Aug., 1892. (Dearness, No. 1,984.)

Maculicolous, epiphyllous, on small ($1-1\frac{1}{2}$ mm.), definite, thin round, white spots. Perithecia subdiscoid, black, about $\frac{1}{4}$ mm. diam. few on a spot. Asci $35-45 \times 10\mu$, oblong-clavate, 8-spored. Sporidia biseriate, oblong-fusoid, inequilateral, hyaline, subobtuse at the ends, (becoming uniseptate)? $12-15 \times 5-6\mu$.

Pleospora carpinicola E. & E.

On dead limbs of *Carpinus americana*, London, Canada. April, 1892. (Dearness, No. 1,738.)

Perithecia buried in the bark, gregarious, depressed-globose, covered by the epidermis which is raised into distinct pustules and barely pierced by the papilliform ostium. Asci cylindrical, short-stipitate, $100-110 \times 8-9\mu$, paraphysate. Sporidia uniseriate, elliptical, obtusely pointed at the ends, 3-septate, constricted at the middle septum, one or two of the inner cells divided by a longitudinal septum, pale yellow, $14-16 \times 7-8\mu$, ends obtusely pointed.

Pleospora decipiens E. & E.

On decorticated, bleached wood of *Azalea*, Newfield, N. J. June, 1877, with *Cheatomyces comatus* E. & E.

Perithecia gregarious, membranaceous, subelliptical, about $\frac{3}{4}$ mm. diam., convex, collapsing above when dry. Ostium indistinct. Asci oblong, $55-65 \times 15-20\mu$, sessile, sparingly paraphysate, 4-8-spored. Sporidia subbiserial, oblong or clavate-oblong, 5-7-septate and muriform, hyaline or slightly tinged with yellow, $35-40 \times 10-12\mu$.

Outwardly this cannot be distinguished from *Zignoella diaphana* (C. & E.) but that has the sporidia smaller and in all the species seen, including those from Montana and Oregon, only 3-septate.

Leptosphaeria lasioderma E. & E.

On dead stems of *Artemisia tridentata*, Spruceмонт, Nevada. Oct., 1892, 8,500 ft. alt. (M. E. Jones, No. 2.)

Perithecia scattered, erumpent-superficial, hemispherical, $\frac{1}{2}-\frac{3}{4}$ mm. diam., perforated above, shaggy with a loose coat of brown, continuous, flaccid hairs $100-150 \times 5-6\mu$. Asci clavate-cylindrical, $65-75 \times 15-20\mu$, with abundant paraphyses, short-stipitate. Sporidia biserial, broad oblong-fusoid, slightly curved, $25-30 \times 10-12\mu$, golden yellow, somewhat constricted at the septa, and occasionally with a short apiculus at each end.

Leptosphaeria lilii Ell. & Dearness.

On leaves of *Lilium superbum*, London, Canada. Aug., 1890. (J. Dearness.)

Spots amphigenous, elliptical, becoming pale, $\frac{1}{2}$ –1 cm. long x 3–5 mm. wide, definite, with a narrow, reddish-purple border. Perithecia amphigenous, scattered, black, sublenticular, pierced above, 150–200 μ diam., erumpent. Asci oblong-cylindrical, paraphysate, with a short, nodular base, 50–60 x 7 μ . Sporidia biseriate, fusoid, 3-septate, constricted at the middle septum with the cell next above swollen, hyaline at first, becoming yellowish, nearly straight 15–18 x 3 μ .

The spermogonial stage (*Phyllosticta lilii* Ell. & Dearness) occurs on the same leaves and does not differ outwardly, sporules hyaline 4–5 x 2 $\frac{1}{2}$ –3 μ .

Leptosphaeria solani E. & E.

On living leaves of *Solanum dulcamara*, London, Canada. Aug., 1892. (Dearness, No. 886 B.)

Perithecia epiphyllous, on small round, white spots 1–3 mm. diam. with a narrow, slightly raised reddish-brown margin, depressed-globose, 150 μ diam., black, erumpent-superficial. Asci clavate-cylindrical, 55–60 x 8 μ , subsessile; paraphyses, if any, very obscure. Sporidia biseriate, fusoid, nearly straight, yellowish, 3-septate, constricted at the middle septum, and the two adjacent cells, especially the one next above, slightly swollen, 16–20 x 2 $\frac{1}{2}$ –3 μ .

There is a *Phyllosticta* on the same spots with smaller, perithecia and sporules, 5–7 x 3 μ . (*P. dulcamaræ* Sacc.)?

Metasphaeria maximiliani E. & E.

On dead stems of *Helianthus maximiliani*, Rockport, Kansas. Dec., 1892. (Bartholomew, No. 821.)

Perithecia scattered, erumpent and semi-emergent or nearly superficial by the peeling off of the epidermis, ovate, about $\frac{1}{3}$ mm. high, black, with a papilliform ostiolum. Asci cylindric-clavate, 75 x 8 μ , paraphysate, 8-spored. Sporidia biseriate, oblong-fusoid, hyaline, 2-septate, and constricted at the septa, obtuse, not appendiculate, 15–20 x 4–5 μ .

Differs from *M. helianthi* Awd. in its rather longer, 2-septate sporidia.

Metasphaeria sphenispora E. & E.

On dead culms of *Erianthus alopecuroides*, near Newark, Del. April, 1892. (Commons, No. 1,941.)

Perithecia gregarious, elliptical in a horizontal section, about $\frac{1}{2}$ mm. diam., strongly convex, flattened at base and fringed with short mycelium, strongly prominent but closely covered by the blackened epidermis, umbilicately perforated above. Asci clavate-cylindrical, sessile or nearly so, paraphysate, $60-65 \times 10-12\mu$. Sporidia crowded-biseriate, cuneate-clavate, 3-septate, obtuse above, at length distinctly constricted at the septa, $12-16 \times 3\frac{1}{2}\mu$, hyaline, not curved.

Differs from *M. graminum* Sacc. in its much larger, and distinctly prominent perithecia. The sporidia are about the same as in that species; differs also essentially from *Leptosphaeria orthogramma* (B. & C.) on the same host.

Metasphaeria fuscata E. & E.

On bark of small, dead oak limbs, (*Quercus coccinea*), Newfield, N. J. Oct., 1892.

Perithecia gregarious, about $\frac{1}{2}$ mm. diam., covered by the epidermis which is blackened over them and raised into rather flattish pustules, which are pierced by the minute papilliform ostium, but not ruptured or torn. The surface of the bark between the pustules is of a smoky hue. Asci oblong-cylindrical, sessile, $75-100 \times 12-15\mu$, 8-spored, with slender filiform paraphyses. Sporidia overlapping-uniseriate, oblong, hyaline, 3-septate and constricted at the septa, rounded at the ends, straight or nearly so, $19-22 \times 7-8\mu$.

Comes near *M. leiostega*, but differs in the blackened epidermis and narrower, oblong sporidia constricted at the septa.

Metasphaeria micræcia E. & E.

On dead twigs and limbs of *Acer spicatum*, London, Canada. May, 1892. (Dearness, No. 1,829.)

Perithecia scattered or subgregarious, minute, ($\frac{1}{8}-\frac{1}{4}$ mm.), white inside, buried in the bark which is raised into minute pustules and barely pierced by the minute, papilliform ostium. Asci oblong-cylindrical, short-stipitate, obscurely paraphysate, $70-85 \times 18-27\mu$, 8-spored. Sporidia biseriate, fusoid, slightly curved, 5-6-nucleate, constricted between the nuclei, hyaline, $40-45 \times 7-10\mu$.

The sporidia are about the same as in *M. myricæ* Pk. but our species is readily distinguished from that by its minute perithecia.

Zignoella nyssægena E. & E.

On outer bark of living *Nyssa multiflora*, Newfield, N. J. Nov., 1892.

Perithecia loosely gregarious, superficial, membranaceous, black and subshining, ovate-globose, about 150μ . diam., perforated above.

Asci oblong, short-stipitate, overtopped by the abundant, filiform paraphyses, $35-60 \times 10-12\mu$, 8-spored. Sporidia biseriate, clavate-pyriform, yellowish-hyaline, 1-2-septate, not constricted, subinequilateral, $13-15 \times 4-5\mu$, at first filled with minute nuclei and without septa. The specimens were not well matured and it may be that the sporidia become 3-septate, but only 2 septa were seen.

Massariovalsa caudata E. & E.

On bark of dead *Ulmus*, London, Canada. June, 1892. (Dearness, No. 1,901.)

Perithecia subcircinate, 3-8 together, buried in the scarcely altered substance of the inner bark, coriaceo-membranaceous, $\frac{3}{8}-\frac{1}{2}$ mm. diam., their obtusely conic-papilliform ostiola erumpent in a small, compressed fascicle through the pustuliform-elevated epidermis. Asci broad oblong-clavate, pseudoparaphysate, substipitate, 8-spored, p. sp. $80-110 \times 20\mu$. Sporidia biseriate, oblong, obtusely rounded at the ends, hyaline, becoming brown, 3-septate, $25-45 \times 12-15\mu$, with a cornute, mostly curved, hyaline, evanescent appendage $12-20\mu$ long, at the lower end and sometimes at both ends.

The sporidia have a thin, hyaline envelope and remain for a long time hyaline.

Glypeosphæria minor E. & E.

On bark of dead birch roots, London, Canada. April, 1892. (J. Dearness.)

Perithecia gregarious, about $\frac{1}{2}$ mm. diam., slightly sunk in the inner bark and raising the epidermis into distinct pustules pierced at the apex by the slightly compressed, subconical ostiolum. Asci clavate, $50-55 \times 5\mu$, with filiform paraphyses 8-spored. Sporidia sub-biseriate, fusoid-oblong, olivaceous-brown, 3-septate, slightly curved, $10-12 \times 2\frac{1}{2}-3\mu$, attenuated toward each end but subobtuse.

Glypeosphæria ulmicola E. & E.

On dead limbs of *Ulmus*, London, Canada. April, 1892. (Dearness, No. 1,776.)

Perithecia thickly but evenly scattered, buried in the bark which is raised into minute pustules, about $\frac{1}{2}$ mm. diam., of a slaty black color and of uniform soft consistence throughout. Ostiola papilliform, erumpent through the minute, black stromatic shield but not prominent. Asci (p. sp.) $75-85 \times 8-9\mu$, cylindrical, paraphysate. Sporidia uniseriate, oblong-elliptical, brown, 3-septate and often constricted at the middle septum, $14-16 \times 7-8\mu$, ends rounded and obtuse.

Thyridium syringæ E. & E.

On dead stems of *Syringa* (lilac), London, Canada. March, 1892. (Dearness, No. 1,654.)

Perithecia thickly scattered, buried in the bark, about $\frac{1}{2}$ mm. diam., with thick, coriaceous walls. Ostiolum papilliform, black, barely perforating the bark which is raised into slight pustules but not ruptured. Asci clavate-cylindrical, 75–80 (p. sp. 65) \times 12 μ , (paraphysate)? 8-spored. Sporidia biseriate above, oblong or clavate-oblong 3-(exceptionally 4-) septate, with one or two of the cells divided by a longitudinal septum, yellowish-brown, 12–15 \times 5–7 μ .

Thyridium americanum E. & E.

On dead and considerably decayed limbs of *Xanthoxylum americanum*, London, Canada, April, 1892. (Dearness, No. 1,780.)

Perithecia evenly scattered or 2–3 lying close together, buried in the inner bark, which is blackened on the surface, 200–400 μ diam., globose, homogeneous and white inside, contracted above into short necks, their globose or conic-papilliform ostiola piercing the epidermis and raising it into numerous small pustules. Asci cylindrical, 100–115 \times 12–15 μ , p. sp. 80–90 μ long, paraphysate, 8-spored. Sporidia uniseriate, elliptical or ovate, 3-septate and submuriform, constricted at the middle septum, 14–17 \times 8–9 μ . Very different from *Thyronectria xanthoxyli* (Pk.). Accompanying the ascigerous perithecia are other similar ones, some of which contain minute spermatia 2 $\frac{1}{2}$ –3 \times $\frac{3}{4}$ μ , others with sporules oblong-fusoid, hyaline, 2-nucleate, 10–12 \times 3 μ , on clavate-basidia 12–15 μ long (*Dendrophoma*)? and others (*Hendersonia xanthoxyli* E. & E.), with oblong-cylindrical, brownish, 3-septate sporules, 10–12 \times 3 μ .

Anthostomella mammoides E. & E.

On dead limbs of *Ostrya virginica*, London, Canada. June, 1892. (Dearness, No. 1,801.)

Perithecia gregarious, about $\frac{1}{2}$ mm. diam., with thick, coriaceous walls, about half sunk in the inner bark, the upper half raising the closely adherent epidermis into strong, dome-like, hemispherical pustules about 1 mm. across, the prominent, large, papilliform ostiola erumpent. Asci cylindrical, paraphysate, 110–120 \times 12–15 μ , 8-spored, p. sp. 90–110 μ , long. Sporidia uniseriate, elliptical, brown, 15–22 \times 10–13 μ .

Eutypella amorphae E. & E.

On dead stems of *Amorpha fruticosa*, Rockport, Kansas. Dec., 1892. (Bartholomew, No. 822.)

Stromata scattered, numerous and lying close together, but mostly not confluent, conic-convex, about 2 mm. diam., formed above from the scarcely altered but slightly paler substance of the bark, and closely circumscribed by a narrow, black line which does not penetrate the wood. Perithecia 6-8 in a stroma, rather less than $\frac{1}{2}$ mm. in diameter, globose, with rather thick walls, partly sunk in the surface of the wood, lying closely crowded together, their slender necks rising close together and the rather large subtubercular, sulcate-cleft fasciculate ostiola piercing, but not rupturing the closely adherent epidermis, which is not perceptibly raised. Asci clavate, 36-40 x 3-3 $\frac{1}{2}$ μ . (p. sp. 15-20 μ long), 8-spored. Sporidia subbiserial, allantoid, slightly curved, hyaline, with a nucleus in each end, 5-6 x 1 $\frac{1}{2}$ μ .

Diaporthe albocarnis E. & E.

On the smaller dead limbs of *Cornus* sp. and on *Staphylea trifolia* and *Ostrya virginica*, London, Canada. May, 1891. (J. Dearness.)

Perithecia 2-4 together in a minute, cortical stroma, small ($\frac{1}{4}$ mm.), solid and white inside, ovate-globose, attenuated above into very short necks with their obscure, scarcely prominent, perforated ostiola united in a flat, black disk, erumpent through the ruptured epidermis which is raised into little pustules thickly scattered over the limbs. Asci clavate, p. sp. about 75 x 7-8 μ . Paraphyses simple filiform, rather stout, longer than the asci. Sporidia subbiserial, fusoid 4-nucleate at first, becoming uniseptate (seldom 3-septate) and constricted and slightly swollen on each side of the septum, sometimes brownish, 12-20 x 3 $\frac{1}{2}$ -5 μ .

There is no circumscribing line around the stroma but the wood to the depth of about 2 mm. is slightly discolored, presenting a clouded or marbled appearance. The margin of the ruptured epidermis is at first stained yellowish. Sometimes there is only a single perithecium in a stroma. This can hardly be *Diaporthe sphingiphora* Ouds. On the same limbs occurs *Myxosporium nitidum* B. & C., which may be the spermogonial stage.

Diaporthe apiospora E. & E.

On bark of dead *Ulmus*, London, Canada. (Dearness), Iowa (Holway.)

Perithecia lying in compact, circinate groups on the surface of the inner bark or slightly buried in it, ovate-globose, black, membranaceous, $\frac{1}{3}$ mm. diam., necks converging with their obtuse smooth ostiola in a small fascicle slightly raising and piercing the thick epidermis, but scarcely rising above it. Asci clavate-cylindrical, $75-80 \times 8-10\mu$, pseudoparaphysate, 8-spored. Sporidia obliquely uniseriate or subbiseriate, obovate, 2-celled, the lower cell very small, the upper one much larger and elliptical, each with a single nucleus, hyaline, $11-15 \times 6-10\mu$.

This has the habit of *Diaporthe* with the sporidia of *Apiospora*.

***Diaporthe ulmicola* E. & E.**

On dead limbs of *Ulmus*, London, Canada. June, 1892. (Dearness, No. 1,869.)

Perithecia 8-12 in a pustule, globose, about $\frac{1}{3}$ mm. diam. slate-color inside, subcircinate, buried in the substance of the inner bark which is unchanged except in being slightly blackened on the surface. Ostiola cylindrical, about $\frac{1}{2}$ mm. long, erect, straight, rising in close fascicles through cracks in the rough outer bark, often, from the close proximity of the pustules from which they rise, forming an almost continuous series for a centimeter or more. Smooth or somewhat quadrisulcate at the apex. Asci (p. sp.) oblong-fusoid, about $40 \times 7\mu$, 8-spored. Sporidia biseriate, oblong-elliptical, 3-4-nucleate, not at all or only slightly constricted in the middle, $8-11 \times 3-4\mu$.

***Diaporthe pruni* E. & E.**

On dead limbs of *Prunus virginiana*, London, Canada. April, 1892 (Dearness, No. 1,695.) and Iowa (Holway).

Stroma cortical, orbicular or elliptical, convex, 3-4 mm. diam., formed from the slightly altered and somewhat paler substance of the bark. Perithecia 8-12, circinate, ovate-globose, $\frac{1}{3}-\frac{1}{2}$ mm. diam., black, finally subcollapsing, partly sunk in the surface of the wood, contracted above into short necks with their hemispheric-conical ostiola erumpent in a whitish disk which is soon obliterated. Asci clavate-fusoid, $60-65 \times 8-10\mu$. (p. sp.). Sporidia biseriate, oblong-fusoid, hyaline, 4-nucleate, slightly constricted in the middle, with a short, cornute appendage at each end, straight, $15-20 \times 3\frac{1}{2}-5\mu$.

Differs from *Cryptospora pennsylvanica*, in its larger, appendiculate sporidia. The stroma is mostly limited (in the bark) by a black, circumscribing line which, however, does not (usually) penetrate the wood. The appendages are mostly a little bent at the tips; spores with appendages $18-22\mu$ long.

The spermogonia (*Cytispora pruni* Ell. and Dearness), contain an abundance of oblong-fusoid sporules, 2-4-nucleate, hyaline, 10-12 x 3 μ . The perithecia appear in the bark, directly beneath the spermogonia.

Diaporthe calosphærioides E. & E.

On dead stems of *Sambucus*, London, Canada. April, 1892. (Dearness, No. 1,744.)

Stroma cortical, convex, 2-4 mm. diam., raising the bark into broad pustules, sunk to the wood but not penetrating it or surrounded by any black circumscribing line, thin, brownish-black, mostly coming off with the bark. Perithecia 6-12, circinate, thin membranaceous and collapsing when dry, about $\frac{1}{2}$ mm. diam., necks slender, decumbent, converging with their broad-papilliform, finally subumbilicate ostiola joined in a flat, brown disk erumpent through the epidermis and closely surrounded by it. Asci fusoid-clavate, p. sp. 50-60 x 8-10 μ , with a fugacious stipe 15-20 μ . long, and long, lanceolate but very evanescent paraphyses. Sporidia biserial, allantoid, hyaline, 3-4-nucleate, rounded at the ends, finally uniseptate, about 15 x 3-3 $\frac{1}{2}$ μ .

This has an outward resemblance to *Pseudovalsa sambucina* Pk., but differs in its sporidia. The long paraphyses and circinate perithecia barely covered by the thin stroma indicate a relationship with *Calosphæria*.

Diaporthe aliena E. & E.

On *Crataegus* (hawthorn), London, Canada. March, 1892. (Dearness, No. 1,793.)

Perithecia 4-6 in a pustule, buried in the scarcely altered bark, not sunk in the wood, black, subcompressed, $\frac{1}{2}$ - $\frac{3}{4}$ mm. diam., with short necks and black, obtuse, coarse ostiola erumpent in a brown, convex disk which is soon obliterated. Asci cylindrical, 75-80 x 7-8 μ . Sporidia uniseriate, 8 in an ascus, short and obtusely-elliptical, hyaline, uniseptate and constricted, with a large nucleus in each cell, 10-13 x 7-8 μ .

According to the spec. of *D. crataegi* (Curr.) in Cke. F. Brit. ser. 1st, No. 380, this cannot be that species, which in the spec. cited, has smaller perithecia and smaller asci with biserial, oblong-fusoid sporidia about 15 x 3 $\frac{1}{2}$ μ , 4-nucleate, becoming uniseptate. There is some confusion in Currey's figures. The ascus he figures on Pl. 48, fig. 135, has uniseriate, elliptical, uniseptate sporidia, while the sporidia figured at 135 (a), are oblong-cylindrical.

Diaporthe spicata E. & E.

On dead limbs of *Acer spicatum*, London, Canada. April, 1892. (Dearness, No. 1,784.)

Perithecia few in a pustule (4–8), small (250–300 μ), black, buried in the bark and not penetrating the wood. Ostiola short-cylindrical or conic-cylindrical, raising the epidermis into little pustules and rupturing or piercing it, but mostly remaining partly covered by it. Asci oblong-fusoid, p. sp. 40 x 7 μ . Sporidia biseriate, oblong or fusoid-oblong, slightly curved, subacute, about 4-nucleate, becoming 1-septate, hyaline, 12–13 x 3–3½ μ .

Differs from *D. acerina* (Pk.) in its smaller perithecia not sunk in the wood, and its curved sporidia.

Eutypella coryli E. & E.

On dead *Corylus*, London, Canada. June, 1892. (Dearness, No. 1,872.)

Perithecia 8–15 in a pustule, globose, coriaceous, about ¼ mm. diam., circinate-buried in the unchanged substance of the inner bark, their 4-cleft ostiola erumpent in a convex, black disk 1–2 mm. diam., which is soon obliterated. Asci clavate, 20–30 x 4 μ , 8-spored. Sporidia biseriate, allantoid, yellowish, moderately curved, 5–6 x 1¼ μ .

The tufts of erumpent ostiola are distinctly prominent. This seems quite distinct from any of the other described species on *Corylus*.

Fenestella ulmicola E. & E.

On dead limbs of *Ulmus americana*, London, Canada. August, 1892. (J. Dearness.)

Stroma orbicular, convex, about ½ cm. diam., closely covered by the epidermis, which is raised into a broad pustule pierced by the minute, black disk but not laciniately torn. Perithecia 6–12, circinate in the dull yellowish, light colored substance of the stroma, ½–¾ mm. diam., ovate-globose, their necks converging and their conic-papilliform or convex, black ostiola erumpent and united in the small disk, which rises slightly above the epidermis. Asci cylindrical, short-stipitate, paraphysate; 110–120 x 12 μ . Sporidia uniseriate, oblong-elliptical, 5-septate, with a longitudinal septum running through, brown, 12–16 x 7–8 μ .

The substance of the stroma is similar to that of *F. vestita*, but the asci and sporidia are smaller.

Valsaria staphylina E. & E.

On dead limbs of *Staphylea trifolia*, London, Canada. May, 1892. (Dearness, No. 1,848.)

Stromata orbicular or elliptical, 2–3 mm. diam., convex-hemispherical, buried in the inner bark which is uniformly blackened on the surface but remains unaltered within, often seriatly arranged. Perithecia subcircinate 6–12 in a stroma, 300–350 μ diam., with short, slender necks, the papilliform ostiola erumpent in a small, black, mostly acutely-elliptical disk visible in longitudinal clefts of the slightly raised epidermis. Asci cylindrical, p. sp. 80–90 x 7 μ , paraphysate, 8-spored. Sporidia uniseriate, oblong-elliptical, obtuse, dark brown, constricted, 12–15 x 7–8 μ , each cell with a single nucleus.

Of less robust growth than *V. insitiva* not blackening the wood, and only blackening the surface of the inner bark.

Diatrypella pulcherrima E. & E.

On dead twigs of *Salix*, London, Canada. May, 1892. (Dearness, No. 1,875.)

Stromata minute, gregarious, cortical, raising the smooth epidermis into convex-hemispherical pustules about 1 mm. diam., and crowned with a minute, white, orbicular disk which is soon obliterated in the center by the tips of the crowded, black, smooth, minute ostiola, which do not however rise quite up to the surface of the disk. Perithecia 8–12, minute ($\frac{1}{4}$ mm. or less), lying in a subcircinate manner in the stroma. Asci (p. sp.) oblong 30–35 x 8–10 μ , polysporous. Sporidia inordinate, allantoid, hyaline, moderately curved, 8–12 x 1 $\frac{1}{2}$ μ .

Nummularia lateritia E. & E.

On bark of dead *Fraxinus sambucifolia*, London, Canada. March, 1892. (Dearness, No. 1,283.)

Stroma carnose-carbonaceous, orbicular, discoid, $\frac{1}{2}$ –1 cm. across, and about 1 mm. thick, dark reddish-brown, bordered by the margin of the ruptured epidermis, seated on the surface of the inner bark and circumscribed by a black line which penetrates to the wood. Ostiola papilliform, becoming umbilicate, scarcely prominent. Perithecia peripheral, ovate $\frac{1}{2}$ mm., or a little more high, and about $\frac{1}{3}$ mm. broad, forming a closely compacted stratum. Asci clavate, paraphysate, long-stipitate, 100–120 x 8 μ , p. sp. 55–60 x 8 μ . Sporidia obliquely uniseriate, navicular, 10–12 x 4–5 μ ,

(exceptionally $12-15 \times 5-6\mu$), nearly hyaline and 2-nucleate at first, becoming opaque and nearly black. Has the habit of *Nummularia rumpens* Ck., but distinguished by its dark red, subcarnose stroma, inconspicuous ostiola and navicular sporidia.

* * DISCOMYCETES.

Lachnea cervicolor E. & E.

On rotten wood, Canada, (Macoun.)

Ascomata, suborbicular, sessile, 4–10 cm. diam., flattened (shallow cup-shaped), with the margin entire and incurved when dry; outside clothed with a dense coat of short, dark ferruginous hairs, the margin with longer, paler, septate hairs $400-600\mu$ long and decumbent or appressed; disk when dry liver color. Asci cylindrical, $150-200 \times 15\mu$, p. sp. $120-150\mu$, long. Paraphyses abruptly thickened at the apex which is about 5μ , thick and hyaline. Sporidia uniseriate oblong-elliptical, with one large, oblong nucleus or with two smaller ones, hyaline, $18-22 \times 11-12\mu$, epispore smooth or sometimes very faintly granular-roughened.

Allied to *L. lanuginosa* (Bull.), *L. hainsei* and *L. aurantiopsis* Ell., but apparently distinct.

Orbilbia caulophylli E. & E.

On dead stems of *Caulophyllum thalictroides*, London, Canada. May, 1892. (Dearness, No. 1,825.)

Ascomata scattered or gregarious, sessile, gelatinous, pale rose color when fresh, orange when dry, about $\frac{1}{2}$ mm. diam., disk plane or slightly concave when fresh, more strongly concave when dry, margin thin, spreading and imperfectly laciniate-toothed when fresh, outside clothed with short, pale glandular hairs. Asci clavate-cylindrical, $40-50 \times 5-6\mu$, 8-spored; paraphyses filiform, not distinctly thickened at the tips. Sporidia biseriate, clavate-oblong, hyaline, continuous, $5-6 \times 1\frac{1}{2}\mu$ (at the thick end.)

Helotium lacteum E. & E.

On decorticated wood, Cazenovia, N. Y. Oct., 1887. O. F. Cook, No. 201, and Marcellus, N. Y. Nov., 1889. (Underwood, No. 66.)

Gregarious and subconfluent. Ascomata stipitate, hemispherical, $\frac{1}{2}-\frac{3}{4}$ mm. across, outside and the slightly concave disk with a thin margin, glandular-pruinose, white with a tinge of yellow, the yellow becoming more distinct when dry. Stipe cylindrical, stout, less in length than the diameter of the disk, pale and pruinose. Asci

clavate-cylindrical, $75-80 \times 5\mu$, with a slender stipe-like base mostly curved, with filiform paraphyses. Sporidia overlapping uniseriate or biseriate, fusoid-oblong, curved, becoming 1-3-septate, $10-15$ (exceptionally 20) $\times 2\frac{1}{2}-3\mu$.

This agrees well with the description of *H. pallescens*, but its smaller size, acutely margined, more distinctly stipitate pruinose cups, and its sporidia often 3-septate seem to separate it from that species.

Phialea dearnessii E. & E.

On dead stems of *Monarda*, London, Canada. May, 1890. (Dearness, No. 1,713.)

Erumpent, scattered, substipitate, nearly sulphur yellow. Ascomata about $\frac{3}{4}$ mm. diam., subolivaceous at first, becoming yellow, substriate, margin subfimbriate, at first incurved then erect, stipe short, less than diameter of the disk, stout. Asci clavate-cylindrical, subsessile, $75-80 \times 10\mu$, with stout paraphyses scarcely thickened above. Sporidia biseriate, fusoid, slightly curved, with two large nuclei, $30-35 \times 3\mu$, gradually attenuated to the slender subulate-pointed ends.

Chlorosplenium salviicolor E. & E.

On dead stems of *Vitis vulpina*, St. Martinville, La. March, 1889. (Langlois, No. 1,679.)

Scattered, subhemispherical at first with the margin incurved, soon expanding to nearly plane, $1\frac{1}{2}-2$ mm. across, dark sage-green, pruinose outside contracted below into a short stipitate base. Margin subincurved and subundulate when dry. Asci clavate-cylindrical, slender, sessile, $30 \times 2\frac{1}{2}-3\mu$. Paraphyses branched above and conidiiferous. Sporidia biseriate, oblong, minute, hyaline $3-4 \times 1-1\frac{1}{4}\mu$. Smaller throughout and of a duller shade of green than *C. æruginescens* Rehm, and does not stain the subjacent wood.

Chlorosplenium canadense E. & E.

In depressions in the rough bark of *Tilia*, and on the bare wood, London, Canada. Oct., 1892. (Dearness, No. 2,032.)

Ascomata cespitose or solitary, stipitate, 1-2 mm. diam., closed at first, then open and umbilicate or concave, hymenium olive-black, margin grayish and often subrepand or lobed. Stem 2-4 mm. long, olivaceous, roughish under the lens, becoming black, clothed at base with a light-olive tomentum composed of sparingly branched hairs, and finally becoming black. Asci slender clavate, $130-150 \times 8-10\mu$,

8-spored, with filiform paraphyses. Sporidia subbiseriate, cylindrical, nearly straight, multi-nucleate, hyaline, $30-60 \times 3\mu$.

Coryne ellisii Berk, *Stilbum magnum* Pk., is probably the conidial stage.

Niptera lithospermi E. & E.

On dead stems of *Lithospermum canescens*, Mount Helena, Montana. Oct., 1889. (Anderson & Kelsey, No. 4.)

Erupeut-superficial, scattered, sessile, about $\frac{3}{4}$ mm. diam., closed at first and opening tardily, black-brown outside and granular from the projecting cells of the external layer, margin whitish. Disk livid white becoming darker, cup-shaped. Asci oblong-cylindrical, sessile, $45-55 \times 8-10\mu$, with obscure paraphyses. Sporidia biseriate, oblong-cylindrical, 1-septate and mostly broadly constricted in the middle, hyaline, $12-20$ (mostly $12-15$) $\times 3-3\frac{1}{2}\mu$, ends, rounded or sometimes obtusely pointed. Hardly distinguishable from *Pyrenopeziza nigrella* Fekl. outwardly, but the sporidia are very different.

Mollisia trametis E. & E.

Parasitic on *Polyporus stevensii* Berk. On a decaying oak chip, Newfield, N. J. Dec., 1888.

Growing on the margin and inner surface of the pores. Cups obconic, $114-150\mu$ diam. honey colored, of fibrous structure, the ends of the fibers projecting so that the outer surface and the margin appear granulose-pubescent or as if covered with sharp pointed granules, convex-hemispherical at first and immarginate, so as to resemble *Nectria*, but soon becoming concave with a distinct sub-fimbriate margin. Asci clavate-oblong, $20-23 \times 4-5\mu$, sessile and without paraphyses. Sporidia biseriate or obliquely uniseriate, narrow-elliptical or clavate oblong, hyaline, continuous, $3\frac{1}{2}-4\frac{1}{2} \times 1\frac{1}{2}-2\mu$. The cups are so near the color of the pores of the fungus on which they grow as to be easily overlooked.

Mollisia nipteroideis E. & E.

On dead stems of *Smilax*, St. Martinville, La. March, 1889. (Langlois, No. 1,674.)

Shallow cup-shaped, $1-1\frac{1}{2}$ mm., across contracted below into a very short stem (almost sessile). Umber color but whitened outside by a pruinose coat and a short erect glandular pubescence which is more abundant toward the margin. Asci oblong-cylindrical, $35-40 \times 5-6\mu$, sessile. Paraphyses branched above and bearing minute globose conidia. Sporidia biseriate, hyaline, 2-3-nucleate, oblong,

straight or slightly curved, $4-5 \times 1\frac{1}{4}-1\frac{1}{2}\mu$. More or less contracted with the margin incurved when dry.

Dermatea fusispora E. & E.

On dead birch limbs, Orono, Maine. (F. L. Harvey.)

Ascomata gregarious, obconical, erumpent-superficial, about 1 mm. diam., subolivaceous outside, the subundulate margin and dull reddish disk white-pruinose; texture loose and soft. Asci narrow-clavate, paraphysate, $70-75 \times 6\mu$. Sporidia biseriate, fusoid, hyaline, continuous, $15-20 \times 2\mu$, slightly curved, continuous. Recognized by its reddish disk and fusoid sporidia.

Dermatea chionanthi E. & E.

On dead limbs of *Chionanthus virginica*, Wilmington, Del. May, 1890. (Commons, 1,449.)

Sessile, solitary or oftener cespitose in compact fascicles of 2-4, dark chestnut-color, obconic, with a narrow margin, $\frac{1}{2}-1$ mm. diam., disk when dry often subrugose, substance firm and dry. Asci $100-110 \times 18-20\mu$. Sporidia biseriate, oblong, continuous, obtuse, slightly curved, granular, hyaline or nearly so, $18-22 \times 7-8\mu$.

Dermatella montanensis E. & E.

On small, dead limbs, among driftwood, Sheridan, Montana. May, 1892. (Mr. and Mrs. H. M. Fitch.)

Erumpent-superficial, orbicular, discoid immarginate, $\frac{3}{4}-1$ mm. diam., livid and subgelatinous when fresh, concave and black with a thin erect margin when dry. Asci oblong-obovate, short-stipitate, p. sp. $72-80 \times 18-22\mu$, 8-spored. Paraphyses stout, ($2-2\frac{1}{2}\mu$ thick), branched and septate, united above in a dark brown epithecium. Sporidia crowded-biseriate, oblong or clavate-oblong, obtuse, 3-septate slightly constricted at the septa, hyaline, becoming yellow-brown, $20-24 \times 7-8\mu$.

Dermatella caryigena E. & E.

On dead limbs of *Carya*, West Chester, Pa. July, 1889.

Cespitose in clusters of 4-8, nearly black, disk slightly convex when fresh, $\frac{1}{2}-\frac{3}{4}$ mm. across with a narrow margin. Asci clavate-cylindrical, $75-80 \times 10\mu$, with abundant subolivaceous paraphyses slightly thickened above. Sporidia obovate-oblong, subinequilateral, 3-septate, greenish-yellow, $12-14 \times 4\frac{1}{2}-6\mu$. The clusters of perithecia which are 1-2 mm. across are erumpent through the epidermis but are attached to it and readily peel off with it.

Dermatella fraxini E. & E.

On bark of *Fraxinus*, London, Canada. Feb., 1890. (Dearness, No. 1,454.)

Gregarious and subcespitose, flesh colored, convex, immarginate $\frac{3}{4}$ –1 mm. diam., contracted below and slightly obconic. Asci clavate-cylindrical, 125–150 x 12–15 μ . Sporidia subbiseriate, oblong-cylindrical, subhyaline and uniseptate at first, then brown and 3–5-septate, 25–35 x 10–12 μ .

Dermatella hamamelidis E. & E.

On dead stems of *Hamamelis virginiana*, West Chester, Pa. June, 1889.

Subcespitose, subsessile, about $\frac{1}{2}$ mm. diam., convex becoming concave, immarginate, dark reddish-brown. Asci clavate-cylindrical, narrowed below into a stout substipitate base, 75–80 x 12–15 μ , with linear paraphyses. Sporidia biseriate, oblong, subinequilateral, yellowish, crowded with nuclei, 12–15 x 5–6 μ . Some of the sporidia were faintly, 3-septate and it is probable that at maturity they all become so.

In the same locality and at the same time were found specimens of *D. purpurescens* (on dead chestnut limbs as before) with the sporidia distinctly 3-septate.

Cenangella violacea E. & E.

On an old cottonwood board, Rockport, Kansas. Dec., 1892. (Bartholomew, No. 833.)

Ascomata gregarious, slaty black, sessile with a thick but narrow base, about $\frac{1}{2}$ mm. diam., disk convex when fresh and deeply rugose, with a narrow obtuse margin, when dry hysteriiform from the rolling together of the opposite sides. Asci obovate, sessile, 35–50 x 15–20 μ , 8-spored. Sporidia inordinate, obovate, hyaline, uniseptate and constricted at the septum, obtuse at the ends, variable in size 12–20 x 5–10 μ , almost exactly the same as those of *Glonium lineare*. Paraphyses stout, jointed, swollen above and violet color (under the microscope), bearing hyaline elliptical, continuous conidia, 5–7 x 3–4 μ .

Belonidium tympanoides E. & E.

On rotten wood, London, Canada. Sept., 1889. (Dearness, No. 948.)

Gregarious, carnose, sessile, black and closed when dry, hemispherical when fresh and $\frac{1}{3}$ – $\frac{1}{2}$ mm. diam., disk concave, pallid, with a

narrow, obtuse margin. Asci clavate-cylindrical, $80-100 \times 12\mu$, with filiform paraphyses curved at the tips. Sporidia cylindrical, hyaline, multiseptate nearly straight, $40-60 \times 2\frac{1}{2}\mu$. The perithecia are at first nearly globose but as the hymenium develops they become excavated above and finally concave.

Blitrydium sabalidis E. & E.

On partly living leaves of *Sabal palmetto*, Bayou Chene, La. Oct., 1888. (Langlois, No. 1,772.)

Perithecia scattered or gregarious, black, conical and closed at first, then open exposing the smoky-gray disk which becomes dirty white, margin sublacerate toothed and subincurved, about $\frac{1}{4}$ mm. diam. All the upper part finally falls away leaving only a black circle with a white center. Asci clavate, $40-50 \times 15-20\mu$. Paraphyses none? Sporidia crowded brownish-yellow, oblong, 4-septate with the next to the upper cell divided by a longitudinal septum, $15-20 \times 6-7\mu$.

This is very distinct from *Dermatea sabalidis* E. & M. (*Cenangium sabalidis* in Sacc. Syll. vol. VIII, p. 562.)

Diplonævia melaleuca E. & E.

On decorticated Poplar, Sand Coulee, Montana. Oct., 1889. (F. W. Anderson, No. 645.)

Perithecia at first closed and buried in the wood, about 1 mm. diam. carinose-membranaceous, thin and black, soon partly erumpent with a round opening at the apex, the margin narrowly white lacerate-fimbriate. Disk livid, concave. Asci subcylindrical, sessile, $75-85 \times 6-8\mu$, surrounded by abundant filiform paraphyses slightly longer than the asci, their tips bent or curved but not distinctly thickened. Sporidia 6-8 in an ascus, biseriate, cylindrical, hyaline, curved, obtuse, 1-septate, $12-15 \times 3\mu$.

Stictis schizoxylodes E. & E.

On dead limbs among driftwood, Mill Creek, Montana. Jan., 1892. (Mrs. L. A. Fitch.)

Ascomata scattered or gregarious, about half sunk in the wood, the upper part convex-hemispherical and prominent, $1-1\frac{1}{2}$ mm. diam., pierced in the center with a small round opening, outside cinereo-furfuraceous and rough. The apical opening gradually enlarges till the glauco-cinereous, concave disk is entirely exposed, bordered by the slightly incurved, prominent margin, appearing then like little cups sunk in the wood. Asci oblong-clavate, sessile, 8-spored,

55–65 x 6–7 μ . Paraphyses branched and conidiiferous at the tips. Sporidia fasciculate, cylindrical, multinucleate, 45–55 x 3 μ , straight while lying in the asci, spirally curved when free, hyaline, faintly 4–6 (or more) septate.

Stictis helicotricha E. & E.

On leaves and sheaths of *Arundinaria tecta*, Starkville, Miss. April, 1890. (Tracy, 1,335.)

Purplish-black throughout about $\frac{1}{2}$ mm. diam., closed at first, at length opening with a small round mouth with the entire border scarcely prominent. The base of the ascoma projects in a pustuliform manner on the other side of the leaf. Asci subcylindrical, attenuated above, 150–170 x 6 μ , with abundant filiform paraphyses broadly recurved at their tips. Sporidia filiform, about as long as the asci, interwoven, multinucleate, becoming multiseptate 1–1 $\frac{1}{2}$ μ thick. Differs from *S. arundinacea* Pers. in lacking the prominent, white border around the mouth, and in the strongly recurved tips of the paraphyses and rather narrower sporidia.

The specific name alludes to the strongly recurved and subinvolute tips of the paraphyses.

Nemacyclus culmigenus Ell. & Langlois.

On dead culms of *Panicum proliferum*, Louisiana. June, 1888. (Langlois, No. 1,443.)

Narrow-elliptical, 1–1 $\frac{1}{2}$ x $\frac{1}{2}$ – $\frac{3}{4}$ mm., acute at each end bordered by the ruptured epidermis. Disk livid-white. Asci oblong, obtusely pointed, 50 x 6 μ . Sporidia linear-fusoid, continuous, about 40 μ , long, faintly nucleolate.

Propolidium fuscocinereum E. & E.

On bark of dead willow limbs, London, Canada. (Dearness.)

Apothecia subcuticular, orbicular, 1–1 $\frac{1}{2}$ mm. diam., flat, thin, light slate-color, with a slightly elevated, narrow, white margin which is not lobed or cleft, soon piercing the epidermis with a round opening exposing the disk. Asci sessile, clavate-oblong, 50–60 x 12–15 μ . Paraphyses branched at their tips and conidiiferous, forming a slightly olivaceous epithecium. Sporidia inordinate, cylindrical, curved, 3-septate, hyaline, ends obtuse, 15–23 x 3–3 $\frac{1}{2}$ μ . Differs from *P. atrovirens* (Fr.) in its thinner substance, different color and narrower sporidia.

Coccophacidium salicinum E. & E.

On dead limbs of *Salix*, Helena, Montana. Jan., 1889. (Rev. F. D. Kelsey, No. 5.)

Ascomata gregarious, erumpent, orbicular, 1 mm. or a little less in diam., depressed-hemispheric at first, then open, discoid and applanate, brown-black outside, margin incurved and finely fimbriate-toothed. Disk slightly concave, (when dry) cinereous. Asci sessile, oblong-cylindrical, $75-80 \times 8\mu$. Paraphyses about equaling the asci, tips brown and bearing small brown, globose 3μ diam., conidia. Sporidia vermiform-fusoid, curved when free so as to form a semicircle or even an imperfect spiral, $35-50\mu$ long, about 3 or $3\frac{1}{2}\mu$ thick in the middle tapering gradually to each end, nucleate, becoming 7-10-pseudo-septate, hyaline.

* * * UREDINEÆ AND USTILAGINEÆ.

Puccinia distichlydis E. & E.

On *Distichlys maritima*, Helena, Montana. Sept., 1891. (Rev. F. D. Kelsey, No. 23.)

III. Sori elongated 2-10 mm. long and 1-2 mm. wide, erumpent, naked, nearly black. Teleutospores oblong or oblong-elliptical, $45-70 \times 15-20\mu$, constricted in the middle, pale-brown, becoming deep chestnut brown; epispore smooth, thickened at summit which is either regularly rounded or subacuminately or mucronately pointed. Pedicels, $80-100\mu$ long, stout ($6-7\mu$ thick) and persistent, yellowish-hyaline.

Seems distinct from *P. graminis*, in its longer, more distinctly constricted spores on longer, stouter pedicels.

Puccinia douglasii E. & E.

On leaves of *Phlox douglasii*, Detroit, Utah. May, 1891. (M. E. Jones, No. 25.)

III. Sori amphigenous, minute, $\frac{1}{3}-\frac{1}{2}$ mm., naked but closely embraced by the epidermis, rather pale chestnut color or sometimes darker, mostly seriate, a single series of sori being arranged along each side of the midrib, the leaf being slightly thickened. Teleutospores oblong-elliptical, $25-55 \times 12-15\mu$, chestnut brown, constricted, rounded at the apex or obtusely pointed, epispore smooth, distinctly thickened at the apex, with or without a papilla.

Differs from *P. plumbaria* Pk., in its smaller, naked sori, which are also much smaller than in *P. giliae* Hark.

Puccinia gutierreziae E. & E. (*P. Bigeloviae*, E. & E., N. A. F. 2,248.)

On leaves of *Gutierrezia euthamia*, Digway, Utah. June, 1892. (M. E. Jones, No. 23.)

III. Sori amphigenous, $\frac{1}{2}$ –1 mm. diam., slaty black, hemispherical, erumpent and soon naked, crowded or confluent, often surrounding and deforming the leaf. Teleutospores oblong, rather pale brown, constricted, the upper cell mostly narrowed into a bluntly pointed apex, the lower cell rounded at base or narrowed into the stout, slightly colored pedicel, which is 75–100 μ long. Epispore smooth, thickened at the apex.

***Puccinia ludibunda* E. & E.**

On leaves of *Carex sparganioides*, Rockport, Kansas. Oct., 1892. (Bartholomew, No. 764.)

III. Sori epiphyllous, dark chestnut-brown or nearly black, soon naked and prominent, 1–3 x $\frac{3}{4}$ –1 $\frac{1}{2}$ mm. Teleutospores clavate or clavate-elliptical, 40–55 x 12–16 μ , constricted at the septum, upper cell more deeply colored and subelliptical, lower cell mostly narrower and paler, epispore smooth, distinctly thickened at the apex which is either regularly rounded or prolonged and obtusely pointed or sometimes truncate and in this case, occasionally crowned with 2–3 short horn-like processes as in *P. coronata*. Pedicel hyaline, stout, about as long as the spore. Besides the uniseptate spores, quite an appreciable number of spores are found with two septa.

***Puccinia tuberculans* E. & E.**

On leaves of *Aplopappus*, Muncy, Nevada. July, 1891. (M. E. Jones, No. 21.)

III. Amphigenous. Sori scattered or confluent, about 1 mm. diam., covered by the thick epidermis which is raised into rather flat tubercles and finally ruptured, color dark chestnut. Teleutospores elliptical or oblong-elliptical, 25–40 x 18–22 μ , slightly constricted, epispore smooth, light chestnut-brown, thickened at the apex of the spore and generally raised into a subacute papilla. Pedicels hyaline, 40–60 μ long.

Seems to be a well marked species on account of the tuberculiform sori.

***Puccinia columbiensis* E. & E.**

On *Ænothera biennis*, Banff, British Columbia. July, 1891. (J. Macoun.)

III. Amphigenous, on yellowish, slightly thickened spots. Sori minute, not over $\frac{1}{4}$ mm. diam., nearly black, erumpent, subconcentrically arranged and crowded in dense, orbicular patches 1 $\frac{1}{2}$ –4 mm. across and whitened by the fragments of the ruptured epidermis.

Teleutospores clavate, $40-50 \times 18-20\mu$, constricted at the septum, upper cell broader and darker, lower cell, attenuated below and paler (subhyaline), epispore smooth, strongly thickened at the rounded or subacute apex. Pedicels as long as or a little longer than the spores.

Very distinct from *P. ænotheræ* Vize.

***Puccinia virgata* E. & E.**

On dead leaves of *Panicum virgatum*, Rockport, Kansas. March, 1892. (E. Bartholomew, No. 496.)

III. Sori amphigenous but more fully developed on the lower side of the leaf, linear, often 1 cm. or more long, erumpent and margined laterally by the ruptured epidermis, dark chestnut-brown, almost black. Teleutospores mostly wedge-shaped or clavate but also, some of them oblong, $40-70 \times 18-22\mu$, the upper cell shorter and elliptical or subglobose and dark, the lower cell longer, narrower and lighter colored, apex rounded and obtuse or subtruncate, and sometimes a little roughened. Epispore thickened at the apex but without any distinct papilla.

Has a general resemblance to *P. graminis* but the spores are different.

***Puccinia lygodesmiæ* E. & E.**

(*P. variolans* Hark? var. *caulicola* in Ell. and Ev., N. A. F. 2,237.)

(I.)? and III. On stems of *Lygodesmia juncea*, Cheyenne Wells, Colorado. July, 1887. (C. H. Demetrio.)

III. Sori about $\frac{1}{2}$ or $\frac{3}{4}$ mm. diam., densely cespitose in elongated patches partly or entirely surrounding the stems, and sometimes covered by the whitened cuticle, but finally bare and dark chestnut color. Teleutospores oblong-elliptical, constricted at the septum, mostly rounded at each end, epispore smooth, thickened at the apex and often with a broad, sometimes oblique papilla, $35-45 \times 20-23\mu$, on stout, persistent pedicels, $100-120\mu$ long. The mode of growth is similar to that of *P. enormis* Fckl., the stems being more or less swollen where occupied by the clusters of sori.

This is very distinct from *P. harknessii* Vize (on *Lygodesmia spinosa*) but closely allied to *P. variolans* Harkness, from which, however, it differs in habit and in the epispore being much thinner in the middle of the spore.

An *Æcidium* which may belong here, was found on the same host in Montana, by Mr. Anderson. The æcidia arising from yellow

swellings on the stems and leaves, are about $\frac{1}{2}$ or $\frac{3}{4}$ mm. high, erect and deeply fimbriate-lacerate above, the membrane thin and white. Aecidiospores, globose, oblong or irregular in shape, smooth or nearly so, $18-22\mu$ in the longer diameter.

Uromyces macounianus E. & E.

On *Euphorbia* sp. (*E. maculata affinis*), Vancouver Island, British Columbia. Aug., 1887. (Macoun, No. 322.)

II. III. Sori amphigenous, convex or subhemispherical, surrounded by the ruptured epidermis, mostly crowded, light chestnut color, becoming darker, about 1 mm. diam. Uredospores globose or ovate, echinulate, about 15μ diam. Teleutospores globose or ovate-elliptical, pale brown, slightly tuberculo-echinulate especially at the apex which is not thickened and is mostly without any distinct papilla, $14-16\mu$ diam. Pedicels shorter than the spores, hyaline and deciduous.

Differs from *U. euphorbiae* C. & P., in its smaller, less distinctly roughened spores and crowded, lighter colored sori which often nearly cover one or both sides of the leaf but are not confluent.

Uromyces sporoboli E. & E.

On *Sporobolus asper* Rockport, Kansas. Sept., 1892. (Bartholomew, No. 733.)

III. Sori mostly hypophyllous, black or nearly so, elongated or linear, 1-4 mm. long, soon naked. Teleutospores of variable shape, subglobose, about 20μ diam., or obovate, $25-30 \times 20-22\mu$, or elongated-piriform or oblong, $30-40 \times 20-22\mu$, evenly rounded at the apex or oftener with a distinct papilla, epispore smooth, distinctly thickened at the apex, chestnut-brown; pedicels $70-100\mu$ long, mostly colored.

Differs from *U. dactylidis* Otth. *U. peckianus* Farlow and *U. graminicola* Burrill in its more robust growth and larger spores, and from the two first mentioned in the absence of paraphyses.

Aecidium ludwigiae E. & E.

On leaves of *Ludwigia sphaerocarpa*, Ellendale, Sussex Co., Del. Sept., 1892. (Commons, No. 1,983.)

Spots amphigenous, purplish-red above, more obscure below, scattered or subconfluent, suborbicular, 1-3 mm. diam. Aecidia amphigenous, but more abundant below, either standing singly or oftener collected in a compact cluster forming a little tubercle 1-2 mm. diam., as in *Ae. myricatum* Schw.; single cups minute ($\frac{1}{4}$ mm.),

margin sublacerate-toothed, erect or nearly so, component cells subquadrate or pentagonal, about 15μ diam., the marginal ones more elongated (20μ). Spores orange-yellow, subglobose or subangular, $12-15\mu$ diam.

Berkeley in Grevillea, reports *Æcid. epilobii* on *Ludwigia*, but the Delaware specc. on account of their smaller clustered cups and smaller spores, can not be referred to that species.

Cerebella spartinæ E. & E.

On spikes of *Spartina gracilis*, Biloxi, Miss. Sept., 1892. (Tracy, No. 1,838.)

Stromata small (2-4 mm.), thin, subconfluent, extending along one side of the spike, often for its entire length, gyrose- or porose-plicate, dark olive. Primary spores ovate or globose, $6-10\mu$ diam., pale, with the epispore minutely granular, compound spores subquadrate, composed of 3-4 of the primary spores, brown, $12-16\mu$ diam., mostly with a short, thick pedicel.

Differs from *C. andropogonis* in habit and from *C. paspali*, in its smaller differently shaped spores.

Sorosporium solidaginis E. & E.

In the dwarfed and condensed inflorescence of *Solidago missouriensis*, Rockport, Kansas. March, 1892. (E. Bartholomew.)

Spore masses subglobose, $30-50\mu$ diam., consisting of 12-40 or more, closely conglutinated spores about 8μ diam., with the epispore delicately warted. The color of the spores is nearly that of burnt umber, rather darker than in *S. californicum* Hark., which this much resembles, but from which it differs in its larger spore masses and spores not so distinctly roughened.

* * * * **SPHÆROPSIDEÆ.**

Phyllosticta tenerrima E. & E.

On living leaves of *Saponaria officinalis*, London, Canada. Aug., Sept., 1892. (Dearness, No. 1,999.)

Spots small (1-2 mm.), thin, round, white and transparent and finally deciduous, numerous but mostly not confluent. Perithecia epiphyllous, depressed-hemispherical, thin-membranaceous, $60-100\mu$ diam., few on a spot. Sporules elliptical or oblong-elliptical, hyaline, $4-6 \times 2-2\frac{1}{2}\mu$, abundant.

Easily recognized by its thin, white, transparent spots.

Phyllosticta astericola E. & E.

On leaves of *Aster umbellatus*, Kenosha Co., Wisconsin. Aug., 1892. (Davis, No. 9,212.)

Spots suborbicular, 1–2 mm. diam., dark brown, margin mostly subrepand and surrounded with a yellowish discoloration, often confluent, paler below. Perithecia epiphyllous, prominent, black, 150–200 μ diam. Sporules abundant, almond-shaped, hyaline, mostly 2-nucleate, 8–11 x 4 μ .

Phyllosticta perforans E. & E.

On leaves of *Solanum dulcamara*, London, Canada. (Dearness.)

Spots amphigenous, small (2–3 mm.), thin and transparent, round or subangular, with a narrow, yellowish, slightly raised border on both sides. Perithecia mostly epiphyllous, few, sublenticular, black, perforated, 100–120 μ diam. Sporules elliptical, subolivaceous (smoky-hyaline), 3½–5½ x 2½ μ .

Differs from *Ph. dulcamaræ* Sacc., in its thin white, mostly smaller spots and subolivaceous sporules. The spots are sometimes confluent and finally deciduous and are sometimes seen partly enclosed in the larger brown spots of *Ph. dulcamaræ*.

Phyllosticta nicotiana E. & E.

On leaves of tobacco, North Carolina. Oct., 1891. (Com. Gerald McCarthy.)

Spots amphigenous, large (½–1½ cm.), irregular in shape, pale dirty brown, lighter in the center, the margin reddish-zonate. Perithecia amphigenous, numerous, erumpent-superficial, black, depressed-hemispherical, ¼ mm. diam., with a broad papilliform ostium. Sporules oblong-elliptical, 3½–5 x 1½ μ . This differs from *Ph. tabaci* Pass., in its erumpent-superficial perithecia and smaller, different shaped sporules. The species of *Ph. tabaci* in Sydow's *M. marchica* (2,375), has spots much like this but less definitely limited, with perithecia less numerous and buried in the leaf so that only their apices are visible, and sporules globose or ovate, 4–6 μ in their longer diameter and about 3–4 μ in the their lesser diam.

Phyllosticta maculans E. & E.

On fallen leaves of *Populus monilifera*, Rockport, Kansas. Aug., 1892. (E. Bartholomew, No. 682.)

Perithecia mostly epiphyllous, erumpent-superficial, black, subglobose, 50–70 μ diam., pierced above, collected in groups, 2–3 mm. in diameter, but sometimes the perithecia are scattered between the

groups. Sporules oblong-cylindrical, hyaline, continuous, straight or very slightly curved, $10-14 \times 3-3\frac{1}{2}\mu$. There are no distinct spots, but the numerous groups of perithecia give the leaf a mottled appearance.

***Phoma subcircinata* E. & E.**

On pods of Lima bean, Newfield, N. J. Oct., 1892.

Perithecia subcuticular, $70-90\mu$ diam., sublenticular, subconfluent pierced above, membranaceous, black, subcircinately arranged in large (1 cm.), round, faintly zonate spots, finally spreading and occupying the entire surface of the pods. Sporules oblong-elliptical, hyaline, 2-nucleate, $5-6 \times 2-2\frac{1}{2}\mu$, on simple basidia rather longer than the sporules.

This differs from *Phoma leguminum* West., in the subcircinate arrangement of the perithecia and the rather longer, binucleate sporules.

***Phoma caulophylli* E. & E.**

On dead stems of *Caulophyllum thalictroides*, London, Canada. June, 1892. (Dearness, No. 1,864.)

Perithecia gregarious, elliptical, $\frac{1}{2}-\frac{3}{4}$ mm. in the longer diameter, covered by the thin epidermis which is raised and blackened over them and pierced by the minute, papilliform ostiolum. Sporules oblong-fusoid, hyaline, 2-nucleate, $5-12 \times 2\frac{1}{2}-3\mu$.

***Sphæroneuma negundinis* (E. & E., Ell. & Evrht. North Am. Fungi, 2775.)**

On bark of dead *Negundo aceroides*, Fairmount Park, Philadelphia, Pa. June, 1890. Coll. Hugo Bilgram, com., W. C. Stevenson, Jr.

Perithecia thickly gregarious, conic-cylindrical, black, $1-1\frac{1}{2}$ mm. high and about $\frac{3}{4}$ mm. thick, truncate at the apex and crowned with a flesh-colored globule of ejected sporules, which are hyaline, fusoid, 3-4-nucleate, $12 \times 3\mu$.

S. pruinatum B. & C. has the perithecia acute at the apex and has larger sporules. In one species the perithecia are nearly cylindrical.

***Asteroma saxifragæ* E. & E.**

On leaves of *Saxifraga bracteosa*, St. George Island, Bering Sea. Sept., 1891. J. M. Macoun.

Epiphyllous. Perithecia globose, $50-80\mu$ diam., of coarse cellular structure densely crowded and connected by stromatic matter, forming a continuous black crust mixed with brown, creeping hyphæ and

covering the entire upper surface of the leaf. Sporules poorly developed, apparently oblong-elliptical, $5 \times 2\mu$, borne on stout sporophores arising from the inner surface of the perithecia, with oil globules intermixed.

Actinonema psoraleæ E. & E.

On living leaves of *Psoralea digitata*, Rockport, Kansas. June, 1892. (E. Bartholomew, No. 627.)

Spots amphigenous, definite, suborbicular, rusty brown 2–4 mm. diam. Perithecia discoid, black, rough, $75\text{--}90\mu$ diam., mostly confluent, forming a black crust about 1 mm. diam., in the middle of the spot, mostly amphigenous. Sporules oblong, hyaline, 2-nucleate, $12\text{--}15 \times 3\frac{1}{2}\text{--}4\mu$.

Asterinula dearnessii E. & E.

On leaves of *Gerardia quercifolia*, London, Canada. August, 1892. (Dearness, No. 1,966.)

Perithecia subdiscoid, brownish-black, $\frac{1}{2}\text{--}\frac{3}{4}$ mm. diam., amphigenous, scattered, entirely superficial. Sporules oblong, uniseptate, olivaceous, abundant, $9\text{--}12 \times 3\mu$.

Vermicularia ochrochæta E. & E.

On the lower surface a decaying maple leaf, near Ottawa, Canada. Sept., 1891. (J. Macoun.)

Perithecia scattered, superficial, black, membranaceous, subglobose, astomous, of radiate-cellular structure, about half a mm. diam., sparingly clothed with long ($200\text{--}300\mu$), pale, straight sparingly septate hairs about 8μ thick at the base and tapering above. Sporules subcylindrical, very slightly curved, obtuse, hyaline, nucleate, $6\text{--}7 \times 1\frac{1}{2}\mu$.

Dothiorella fraxini E. & E.

On dead *Fraxinus*, London, Canada. April, 1892. (J. Dearness.)

Perithecia globose, black, buried in the bark, thickly scattered, either singly or 2–4 together in subvalsiform groups, their short subpapilliform, black ostiola erumpent through the epidermis, with the general appearance of a minute *Valsa*. Sporules elliptical, hyaline, $18\text{--}20 \times 10\text{--}12\mu$, on stout basidia.

The ostiola merely rupture the bark but do not rise above it. Found associated with *Endoxyla fraxini* E. & E.

Differs from *D. fraxinea* Sacc. and Roum., in its buried perithecia and larger sporules.

Cytispora annulata E. & E.

On dead limbs of *Negundo aceroides* with *Sphaeropsis albescens* E. & E., Brookings, South Dakota. Oct., 1891. (Thos. A. Williams.)

Stromata minute, convex, multilocular, hardly exceeding 1 mm. in diam., subcuticular, slate-color inside, furnished with a single central pore which opens through the apex of a minute pustule and is surrounded by a minute light colored ring. Sporules oblong, straight or only slightly curved, hyaline, continuous, $5-6 \times 1-1\frac{1}{4}\mu$. The epidermis is finally blackened directly over the pustules, except the ruptured margin which forms a pale ring around the ostium.

This differs from *C. macilenta* Rob. and Desm. as shown by the spec. in *Desm. exsicc.* in its much smaller sporules and more numerous cells.

Cytispora carnea E. & E.

On basswood bark, Orono, Maine. (F. L. Harvey.)

Stromata convex, 3-4 mm. diam., granulose-tomentose and grayish-black outside, multilocular and grayish-black, streaked with white within, uneven above and furnished with 3-4 or more stout ostia which rupture and raise the epidermis and are crowned with a flesh colored globule of discharged sporules which are oblong, hyaline (under the microscope), obtuse, straight, $8-12 \times 3\mu$. The stromata do not penetrate deeply into the inner bark and are not circumscribed by any black line but the bark is more or less blackened.

Ascochyta rhei E. & E.

(*Phyllosticta rhei* E. & E., Journ. Mycol. I, p. 145.)

More perfect spec. on leaves of *Rheum rhaponticum* from Rockport, Kansas (Bartholomew, No. 713), show that this is an *Ascochyta*, the sporules becoming uniseptate; they are also mostly narrowed in the middle and are larger than in the Newfield spec. ($7-12 \times 3\frac{1}{2}-4\mu$.) The spots are about the same only not so distinctly zonate, but the perithecia are smaller.

Sphaeropsis vitigena E. & E.

On dead shoots of *Vitis* (cult.), Rockport, Kansas. Feb., 1892. (E. Bartholomew, No. 507.)

Perithecia globose, minute, about $\frac{1}{4}$ mm. diam., numerous, buried in the bark and raising the epidermis into numerous small pustules which are pierced by the papilliform ostium. Sporules oblong-elliptical, brown, $18-20 \times 8-10\mu$, not nucleate or septate.

Quite different from *S. viticola* Cke. in Rav., F. Am., 542 (on leaves of *Vitis*), and also from *S. uvarum* B. & C. (on the fruit.)

Botryodiplodia acerina E. & E.

On bark of dead *Acer rubrum*, London, Canada. June, 1892. (J. Dearness.)

Perithecia ovate-globose, obtuse and rounded above, $\frac{1}{2}$ mm. diam., erumpent in densely compacted clusters, 2-3 mm. across and bordered by the upturned epidermis. Sporules elliptical, brown, mostly uniseptate but not constricted, $15-22 \times 12-13\mu$.

This occurs with *Valsa multiplex*, and may be its pycnidial stage.

Camarosporium mali E. & E.

On decorticated limbs of apple trees, London, Canada. May, 1892. (Dearness, No. 1,837.)

Perithecia gregarious, erumpent-superficial, subhemispherical, mostly about $\frac{1}{3}$ mm. diam., becoming smooth and subshining at the apex. Ostiolum papilliform. Sporules variable in shape and size, from globose to oblong-elliptical or biconical, and $8-16 \times 6-10\mu$ (mostly $12-15 \times 6-7\mu$ brown, about 3-septate at first, becoming 5-8-septate with one or more of the cells divided by a longitudinal septum.

This differs from *C. robiniae* in its much more variable sporules and in habit.

Camarosporium graminicolum E. & E.

On dead culms of *Ammophila arenaria*, Long Island, New York. July, 1892. (Smith Ely Jelliffe, M. D.)

Perithecia innate, minute ($\frac{1}{4}$ mm.), scattered, appearing as black specks through the slightly raised cuticle. Sporules biconic-elliptical, $20-30 \times 12-15\mu$, 3-7-septate, with one or two longitudinal septa across the middle cells, pale brown, the terminal cells subhyaline, resembling the sporidia of *Fenestella princeps* Tul.

Hendersonia alternifoliae E. & E.

On bark of dead *Cornus alternifolia* London, Canada. June, 1892. (Dearness, No. 1890.)

Perithecia scattered, small, subcuticular, raising the epidermis into little pustules, with the obtuse apex erumpent but not prominent. Sporules oblong-elliptical, hyaline and granular at first, becoming yellow-brown and 3-septate, large $22-30 \times 11-12\mu$. There are also globose sporules $10-15\mu$ diam., brownish like the others, and fusoid-falcate, hyaline spores $35-45 \times 3\mu$ granular and continuous. Whether this is the pycnidial stage of *Massaria corni* Fekl. we cannot say.

Differs from *H. fiedleri* West and *H. decipiens* Thüm. in its much larger sporules.

Hendersonia staphyleæ E. & E. Journ. Mycol. I, p. 151.

On dead twigs of *Staphylea trifolia*, Wilmington, Del. April, 1892. (A. Commons, No. 1939.)

The following diagnosis of this species is given as supplementary to the brief notice in Journ. Mycol.

Perithecia evenly scattered, numerous, pustuliform with a flat base, seated on the surface of the inner bark and covered by the blackened epidermis, which is not laciniately ruptured, but merely pierced by the apex of the perithecium. Sporules, oblong-fusoid, pale brown, 3-septate, and slightly constricted at the septa, narrower below with the lower cell hyaline, 12–20 (mostly 15–18) \times 4–5 μ , on basidia about as long as the sporules.

Differs from *H. sarmentorum* West in not penetrating the inner bark and in its longer, paler sporules on shorter basidia. The same thing has been sent from Kansas (Kell. and Swingle, 1,237) on *Euonymus atropurpureus*.

Stagonospora strictae E. & E.

On leaves of *Carex stricta*, Rockport, Kansas. Jan., 1892. (Elam Bartholomew.)

Spots elliptical, dirty white, 3–5 \times 1½–2 mm., with a darker border. Perithecia scattered on the spots, sunk in the parenchyma of the leaf, brown, or when dry nearly black, 100–150 μ diam., perforated above, visible on the upper surface through the thin epidermis. Sporules elliptic-oblong, hyaline, 2-septate and constricted at the septa, 20–30 \times 8–10½ μ .

The spots are like those of "*Phleospora*" (*Stagonospora*) *caricis* E. & E., but the sporules are different.

Stagonospora sclerotioides E. & E.

On decorticated wood of *Ostrya virginica*, London, Canada. March, 1892. (J. Dearness.)

Perithecia subseriate, erumpent-superficial, brownish-black, elongated at first, then globose, sometimes subconfluent, about 1 mm. diam., of horn-like consistence, white inside, seated on indefinite, subelongated spots limited by a narrow, black, circumscribing line which penetrates deeply into the wood. Sporules oblong, hyaline, 2-nucleate, 6–7 \times 1½ μ .

Septoria mitellæ E. & E.

On leaves of *Mitella diphylla*, near the Mich. Ag. College. May, 16th, 1892. (G. H. Hicks.)

Spots suborbicular or irregular rusty brown, becoming white or whitish in the center, with a rather broad, reddish-brown margin, 2–4 mm. diam., often numerous. Perithecia epiphyllous, black, subprominent, scattered or sometimes only 1–3 in the center of the spot, depressed hemispherical, 75–80 μ diam., pierced at the apex and blackened around the orifice. Sporules acicular, hyaline, continuous, straight or only slightly curved, acute, 15–22 x 1 μ .

Septoria agropyri E. & E.

On leaves of *Agropyrum repens*, Racine, Wis. July, 1892. (Davis, No. 925.)

Perithecia about 75 μ diam., buried in the substance of the leaf and only visible as minute, black specks on the upper surface. They appear at first on narrow, pale yellowish strips soon confluent laterally and finally changing to a uniform brown color and occupying a great part of the leaf. Sporules rod-shaped, slightly curved, ends subacute, faintly nucleate, continuous, 18–25 x 1½ μ , hyaline.

Differs from *S. gracilis* Pass. on the same host, in its sporules twice as large, and in its different habit.

Septoria purpureocincta E. & E.

On leaves of *Prunus americana*, Rockport, Kansas. Sept., 1892. (Barthelomew, No. 709.)

Spots amphigenous, irregular in shape, whitish in the center, with a broad, shaded dark purple border above, rusty brown and without any distinct border below. Perithecia epiphyllous, globose, open above, 75–85 μ diam., brownish black, numerous, subprominent. Sporules filiform, hyaline, 20–30 x 2 μ , with a row of very distinct nuclei but not septate (in any of the specc. examined.)

The character of the spots will easily separate this from any of the other species on *Prunus*.

Septoria aurea E. & E.

On leaves of *Ribes aureum*, Rockport, Kansas (Barthelomew, No. 49), and Racine, Wis. (Davis, No. 9,037.)

Spots amphigenous, greenish, definite, darker and mostly zonate toward the margin, 2–4 mm. diam., often concave below. Perithecia crowded in the middle of the spots, mostly hypophyllous, 80–100 μ diam., subprominent, but innate in the substance of the leaf.

Sporules filiform, rather broader above, multinucleate, becoming 3-5-septate, hyaline, $30-55 \times 1\frac{1}{2}-2\mu$.

Var. destruens (Bartholomew, No. 703, Sept., 1892), has the tips of the leaves and often the entire leaf mottled with black and yellow, becoming brown and dead, and the sporules $40-75 \times 2-2\frac{1}{2}\mu$.

This differs from *S. ribis* Desm. in its septate sporules and the different character of the spots.

***Septoria gaillardiae* E. & E.**

On leaves of *Gaillardia pulchella*, Rockport, Kansas. Aug., 1892. (E. Bartholomew.)

Spot amphigenous, orbicular, light brown, with a dull white center; both the dull white center and the larger, brown spot in which it is included, are surrounded by a narrow, raised border. Perithecia amphigenous, $75-90\mu$, semierumpent, black, either confined to the white central spot or often scattered over the white and brown. Sporules filiform, nucleate, $45-65 \times 1\frac{1}{4}-1\frac{1}{2}\mu$.

***Septoria glabra* E. & E.**

On leaves of *Æsculus glabra*, Indianapolis, Indiana. Aug., 1880. (Coll., W. J. Beale, com., G. H. Hicks.)

Perithecia hypophyllous, globose, black, $75-85\mu$ diam., scattered on dark brown spots which are more or less whitened, especially above, by the thin bleached epidermis. The spots are situated either in the green parts of the leaf or on dead red-brown areas, and are rather irregular in outline, 2-3 mm. diam., with a rather broad, not raised, dark border, the central portion more or less whitened. Sporules filiform, continuous, nearly straight, faintly nucleate, $30-45 \times 1\frac{1}{2}-2\mu$.

This is certainly different from *S. æsculi* (Lib.) which (sec. specc. in Sacc. M. Ven., Thüm. M. U. and Briosi and Cavarra's F. Parass.) has only 1-3 perithecia on small ($1-1\frac{1}{2}$ mm.), white spots, with shorter, thicker sporules arcuate curved and about 3-septate.

Briosi and Cavarra remark that *Septoria æsculina* Thüm. and *S. hippocastani* B. & Br., are hardly more than forms of *S. æsculi* and the species in our Exsiccati seem to warrant that conclusion.

***Septoria lepachidis* E. & E.**

On leaves of *Lepachys columnaris*, Rockport, Kansas. June, 1893. (Mr. E. Bartholomew, No. 584.)

Spots numerous, dark grayish-brown, 2–4 mm. diam., suborbicular, definite but without any distinct border, amphigenous. Perithecia epiphyllous, numerous, subprominent, pale, becoming darker, globose, $75\text{--}80\mu$ diam., perforated above. Sporules abundant, fusoid, hyaline, continuous, faintly nucleolate, straight or a little curved, $12\text{--}30$ (mostly $15\text{--}20$) \times $1\frac{1}{4}\text{--}1\frac{1}{2}\mu$.

Differs from *S. infusata* Winter (on *Lepachys pinnata*), in its much shorter sporules.

Septoria negundinis E. & E.

On leaves of *Negundo aceroides*, London, Canada. Aug., 1892. (Dearness, No. 19.)

Spots punctiform, minute, white, amphigenous, with a single perithecium in the center, often confluent forming an irregular shaped, angular white spot 2–3 mm. diam. Perithecia at first pale, then black, rather large, the papilliform apex erumpent, amphigenous, but more distinct above. Sporules cylindrical, mostly regularly curved, nucleate, then 1–3-septate, $25\text{--}50 \times 2\mu$.

This must be closely allied to *S. acerella* Sacc., but that is said to have sporules only $20\text{--}22\mu$ long, subcontinuous.

Septoria carpigena E. & E.

On dead twigs and fruit of *Celtis occidentalis*, Mount Cuba, Delaware. March, 1892. (A. Commons.)

Perithecia erumpent in small clusters surrounded by the margin of the ruptured epidermis, ovate-globose, black, rough, with a conic-papilliform, smooth, black ostium. Sporules abundant, vermicular, curved or undulate, 4-or more-nucleate, hyaline, continuous, obtuse, $20\text{--}30 \times 3\mu$.

Micropera fraxini E. & E.

On bark of dead limbs of *Fraxinus americana*, London, Canada. Apr., 1892. (Dearness, No. 1,808.)

Perithecia (cells) peripheral, minute, immersed, with the apex slightly prominent and sometimes collapsing, seated on an olivaceous, hemispheric-tuberculiform erumpent-superficial stroma (paler within) $\frac{1}{2}\text{--}1$ mm. diam. Sporules cylindrical, hyaline, curved, nucleate, obtuse, about $20 \times 5\mu$, borne on stout basidia $15\text{--}20 \times 3\mu$.

Seems almost to be a styloporous *Dothidea*.

Exoipula canadensis E. & E.

On bleached wood of elm rails, London, Canada. Aug., 1892. (Dearness, No. 1,985.)

Perithecia gregarious, erumpent-superficial, thin, black, $\frac{1}{3}$ – $\frac{1}{2}$ mm. diam., closed, globose and smooth at first, soon broadly open above and cup-shaped, with the margin substrate and more or less distinctly fringed with short, brown hairs. Sporules navicular, continuous, olivaceous, $5-6 \times 2\frac{1}{2}\mu$, ends acute, borne on simple, stout, olivaceous basidia about $12 \times 2\frac{1}{2}\mu$.

***Exoipulina hicksiana* E. & E.**

On bleached, decorticated wood, Michigan. (G. H. Hicks.)

Perithecia, scattered, globose or oblong and hysteriiform, $\frac{1}{3}$ – $\frac{3}{4}$ mm. in the longer diameter, thin, membranaceous, obsolete below, darker and more coarsely granular toward the margin, at first closed, soon opening with a longitudinal dehiscence like a *Hysterium*, base adnate to the wood, hymenium, pale. Sporules oblong-cylindrical, hyaline, obtuse, 2–3-septate, $8-15 \times 3-4\mu$, straight or slightly curved; texture loosely cellular, thin, not fibrous.

***Catinula saligna* E. & E.**

On dead limbs of *Salix*, London, Canada. Feb., 1890. (Dearness, No. 1,420.)

Perithecia scattered, erumpent, short cylindrical or obconical, stipitate, about 1 mm. high, broadly perforated or open at the apex, black and subshining. Sporules oblong-cylindrical, hyaline, continuous, $15-20 \times 6-7\mu$, on basidia $15-20 \times 3\mu$.

This differs from *C. turgida* Desm. only in its more elongated perithecia and rather narrower sporules. A form occurs on *Carpinus* (Dearness, No. 1,565) that cannot be distinguished from *C. turgida*, and it may be as well to consider our *C. saligna* as only a robust form of that species.

***Hainesia borealis* E. & E.**

Ell. & Evrht. N. A. F., 2,785.

On leaves of *Galium boreale*, British Columbia. July, 1889. (J. Macoun.)

Acervuli hypophyllous, scattered, convex-discoid, 175–200 μ diam., flesh-colored becoming darker when dry, subcuticular at first but soon erumpent-prominent. Conidia allantoid, hyaline, slightly curved, $5-6 \times 1\mu$ on simple, slender basidia $12-15 \times 1-1\frac{1}{2}\mu$.

The parts of the leaf occupied by the fungus soon become pale brown and dead. *Hainesia rubi* (West.) has been sent from Ontario, Canada, by Mr. Dearness.

Glæosporium davisii E. & E.

On pods of *Vicia americana*, Berryville, Wis. July, 1890. (Davis, No. 927.)

Occupying small (1-2 mm.), dead spots on the pods. Acervuli innate, erumpent in small, pale rose colored pustules. Conidia oblong-elliptical, hyaline, continuous, $5-8 \times 3-4\mu$.

Distinguished from *G. viciæ* E. & E., as well as from *G. leguminis* C. & H., by its much smaller conidia.

Glæosporium americanum E. & E.

On leaves of *Vicia americana*, Berryville, Wis. July, 1892. (Davis, No. 928.)

Spots amphigenous, dull green, 2-3 mm. diam., suborbicular and rather indefinitely limited, only two or three on a leaf. Acervuli innate, about 80μ diam., pale rose color, erumpent above. Conidia oblong, obtuse, $12-16 \times 3-3\frac{1}{2}\mu$, on basidia of about the same length.

Comes nearest *G. kurzianum* Niessl, but a comparison with species of that species in Rab. F. Eur. shows the habit to be quite different. *Gl. viciæ* Fauntrey and Roum. has conidia, $16 \times 12\mu$.

Glæosporium ribicolum E. & E.

On fruit of *Ribes* (English gooseberry, cult.), Wilmington, Del. June, 1892. (A. Commons, No. 1,961.)

Acervuli minute, numerous, crowded, pale, soon erumpent and subconfluent in orbicular patches $\frac{1}{2}$ cm. across and of a pale orange color. Spores oblong, $7-12 \times 3-3\frac{1}{2}\mu$, on stout, densely fasciculate basidia about 20μ long. Seems most nearly allied to *G. phomoides* Sacc.

Glæosporium caryæ E. & E. (N. A. F., 2783.)

On leaves of *Carya alba*, London, Canada. (Dearness.)

Spots amphigenous, suborbicular, indefinite, brown, 1-2 cm. diam. Acervuli hypophyllous, numerous, $80-150\mu$ diam. Sporules oblong, continuous, hyaline, $7-10 \times 1-1\frac{1}{2}\mu$.

Cylindrosporium phaceliæ E. & E.

On leaves of *Phacelia sericea*, Basin, Montana. July, 1892. (Kelsey, No. 1.)

Amphigenous. Acervuli minute, buried, numerous, the exuding conidia making the surface of the leaf white-farinose. Conidia oblong or cylindrical, variable in length ($15-40 \times 3-3\frac{1}{2}\mu$)

Cylindrosporium caryigenum E. & E. N. A. F., 2451.

On living leaves of *Carya amara*, London, Canada. (Dearness.)

Hypophyllous, spots indefinite, pale at first, finally brownish and visible on both sides of the leaf. Acervuli, minute, numerous, pale. Sporules erumpent below, cylindrical, curved, with a row of nuclei, $25-40 \times 3\mu$.

In the early stage of growth, this has the aspect of a *Ramularia*.

Marsonia rhabdospora E. & E.

On leaves of *Populus grandidentata*, Newfield, N. J. Sept.-Oct., 1892.

Spots amphigenous, numerous, subangular, 1-4 mm. diam., with a cinereous-white center and definite, narrow, dark margin, surrounded with a yellow aureola. Acervuli hypophyllous, flesh colored, erumpent, often seated around the margin of the spot with one or more in the center. Conidia cylindrical, nearly straight, uniseptate, $20-30 \times 2\frac{1}{2}\mu$, ends obtuse, much resembling the sporules of *Septoria populi* Desm. which is quite different from this, having true perithecia which are also epiphyllous and nearly black.

The spots in our fungus are at first minute and brownish-black, but even then surrounded by the yellow aureola.

Coryneum cornicolum E. & E.

On the inner surface of dead bark of *Cornus alternifolia*, London, Canada. June, 1892. (Dearness, No. 1,892.)

Acervuli erumpent, various, tubercular, pulvinate or convex, black, punctiform or 1 mm. or more in diam., and subconfluent, appearing much like the masses of erumpent spores of some *Melanconium*. Conidia vermiciform-fusoid, 6-8-septate, the end cells hyaline, the others brown, mostly curved, $35-45 \times 7-8\mu$, on basidia about half as long or even less.

* * * * * **HYPHOMYCETÆ.**

Botrytis pannosa E. & E.

On rotten maple, Seattle, Washington. March, 1892. (Miss Parker, No. 60.)

Hyphæ effused and interwoven, brown, subcontinuous, and suboppositely branched, the ends of the branches mostly a little swollen and spiculiferous, bearing the abundant, ovate, hyaline conidia, $5-6 \times 3-3\frac{1}{2}\mu$.

The tufts of hyphæ form, an olive-brown, rather thick, loosely felted layer several centimeters in extent.

This is *B. fairmani* E. & E. in Herb.

Botrytis affinis E. & E.

On decorticated wood of a decaying, white ash log, London, Canada. Nov., 1892. (Dearness, No. 2,073.)

Forms a thin olive-black velvet-like coating on the surface of the wood. Hyphæ erect, brownish-olive, sparingly and obscurely septate, more or less minutely muriculate-roughened, about 4μ diam., subdichotomously branched, the branches near the summit mostly opposite, short ($12-15\mu$), erect, slightly swollen and roughened at their tips where are attached in loose clusters the olive-brown, globose or elliptical conidia which are $4-5\mu$ in their longer diameter.

Scarcely distinguishable externally from *B. fuliginosa* C. & E., but the mode of branching is different and the conidia larger.

Ramularia lethalis E. & E.

On living leaves of *Acer rubrum*, London, Canada. June, 1890. (Dearness, No. 1,730). Sent also from Michigan by G. H. Hicks.

Hypophyllous, forming at first small, irregular shaped, lead-colored patches along the midrib and nerves, generally toward the apex of the leaf, which soon turns black in these affected spots and soon spreads over the upper half of the leaf which then becomes black and dead, and soon crumbles away. The blackened areas enclose paler, whitish spots. Hyphæ subfasciculate, simple, continuous, hyaline, $10-15 \times 1\frac{1}{2}-2\mu$, bearing at their tips the subcatenulate, oblong, hyaline continuous, $5-10 \times 2-2\frac{1}{2}\mu$ conidia.

The fungus is very destructive to the leaves.

Clasterisporium pulchrum E. & E.

On bark of dead *Carpinus americana*, London, Canada. June, 1892. (Dearness, No. 1,900.)

Effused, velvety, black. Creeping hyphæ, septate, branched, interwoven, with here and there tufts of paler, straight; erect-spreading lance-shaped hyphæ arising from a membranaceous, perithecium-like base. Conidia clavate, mostly a little curved, truncate or 3-4-cleft at the apex, 7-9-septate, the upper cell paler and armed with about 4 lateral boss-like tubercles or short horns. The whole probably forms the conidial stage of some *Pyrenomycete*, of the family *Lasiothæciaceæ*.

Dendryphium sphærioides E. & E.

On *Bigelovia douglasii*, Sprucemont, Nevada. Oct., 31, 1892. (M. E. Jones, No. 6.)

Forming black tuberculiform tufts on the dead stems, about 1 mm. across and composed of closely packed chains of conidia about 120μ long and $10\text{--}12\mu$ broad, the single conidia being elliptical, brown, uniseptate and constricted, about $20 \times 10\text{--}12\mu$, placed end to end without any connecting cell.

Cercospora nicotianæ E. & E.

On leaves of tobacco, Raleigh, N. C. Oct., 1891. (com., Gerald McCarthy.)

Spots amphigenous, pale, becoming white, 2–5 mm. diam., with a narrow, inconspicuous, reddish, slightly raised border, often concave below. Hyphæ tufted, amphigenous, $75\text{--}100 \times 4\text{--}5\mu$, 2–3-times geniculate above and sometimes with a short, lateral branch brown, septate. Conidia slender, $40\text{--}75 \times 3\text{--}3\frac{1}{2}\mu$, hyaline, slightly curved, multiseptate (mostly about 6-septate.)

Cercospora nesææ E. & E.

On leaves of *Nesaea verticillata*, Milford, Del. Sept., 1892. (Commons, No. 1,984.)

Spots amphigenous, scattered, suborbicular or irregular, 2–4 mm. diam., with a shaded, purple border. Hyphæ epiphyllous, tufted, $35\text{--}45 \times 2\frac{1}{2}\text{--}3\mu$, continuous, olivaceous or smoky-hyaline, geniculate above. Conidia clavate-cylindrical, hyaline, 3–5-(mostly 3-) septate, $25\text{--}75 \times 2\frac{1}{2}\text{--}3\mu$.

The minute black tufts of hyphæ under the hand lens resemble the perithecia of some *Septoria* or *Phyllosticta*.

Cercospora weigelæ E. & E.

On leaves of *Weigelæ* (cult.), Newfield, N. J. Sept., 1889. Sent also from Washington, D. C. by Miss E. A. Southworth.

Spots small (1–2 mm.), white, with a broad, shaded, dark purple border. Hyphæ in small tufts scattered thickly over the central part of the spot, geniculate and toothed above $70\text{--}90 \times 3\frac{1}{2}\text{--}4\frac{1}{2}\mu$, brown, continuous. Conidia terminal slender clavate, hyaline, nucleate, $50\text{--}75 \times 2\frac{1}{2}\text{--}3\mu$.

Cercospora crotonis E. & E.

On leaves of *Croton texensis*, Rockport, Kansas. Aug., 1892. (Bartholomew, No. 359.)

Spots indistinct, pallid, not definitely limited, finally subconfluent and brownish, giving the leaf a dirty withered look. Tufts mostly epiphyllous, in small but dense fascicles, appearing under the lens like minute, black grains thickly scattered over the spots. Hyphæ

olive-brown, continuous, nucleate, torulose above $35-50 \times 4\mu$. Conidia obclavate, brownish, obtuse, nearly straight, faintly 1-4-septate, $40-90 \times 4-5\mu$.

Quite distinct from *C. crotonifolia* Cke. which is on definite spots and has much shorter hyphæ and smaller conidia.

Ceroospora ditissima E. & E.

On leaves of *Cnicus undulatus*, Rockport, Kansas. June, 1892. (E. Bartholomew, No. 605.)

Spots dirty brown, subindefinite, suborbicular, 3-5 mm. diam. Hyphæ amphigenous, densely tufted on a dark colored, tubercular base $75-85\mu$ diam., short ($15-20 \times 2\frac{1}{2}-3\mu$), subhyaline, toothed above and subobtuse, simple, continuous, $30-75 \times 4-6\mu$, subhyaline, straight, oblong or obclavate, 3-5-septate.

Cheiromyces comatus E. & E.

On decorticated *Azalea*, Newfield, N. J. June, 1877.

Gregarious on the bleached surface of the wood. Acervuli minute ($\frac{1}{2}-\frac{3}{4}$ mm. long), subhysteriiform-erumpent, black. Conidia multipartite, the divisions (nearly 100 in number) subcylindrical, somewhat attenuated above, $35-40 \times 2-2\frac{1}{2}\mu$, 5-7-septate, hyaline, united at base so as to form a brush-like tuft $15-20\mu$ thick. The tufts arise directly from the cells of the proligerous layer, without any distinct basidia. The habit is the same as that of *C. beaumontii* B. & C. as distributed in N. A. F., 762, and like that species and *C. tinctus* Pk., differs considerably from the species figured by Berk. in Int. Crypt. Bot. in the absence of any pulvinate stromatic base.

Volutella bartholomæi E. & E.

On leaves of *Sporobolus asper*, Rockport, Kansas. Sept., 1892. (E. Bartholomew.)

Sporodochia evenly scattered, hemispherical or oblong-hemispherical, olive-black, $\frac{1}{3}-\frac{1}{2}$ mm. diam., made up of closely packed, oblong-cylindrical, olivaceous, 2-nucleate, $9-11 \times 2\frac{1}{2}\mu$ conidia arising directly from the proligerous layer, without any visible sporophores, the whole surrounded by an imperfectly developed, membranaceous ring or border subtended by a few (3-6) erect-spreading olivaceous, continuous bristles $4-5\mu$ thick at base and tapering to the obtuse, subhyaline apex.

Stigmina liriiodendri E. & E.

On fading leaves of *Liriodendron tulipifera*, Saltillo, Mississippi. Oct., 1892. (Tracy, No. 1,829.)

Spots amphigenous, subindefinite, dark brown, with a yellow-shaded border, 3-5 mm. diam. Acervuli numerous, hypophyllous, standing circumferentially on the spots so as to leave the center bare. Conidia oblong-cylindrical, brown, 1-3 (mostly 3-) septate, 10-15 x $3\frac{1}{2}$ -4 μ , not constricted at the septa, 3-4-or more-catenulate, catenulæ sometimes branching above.